TRAFFIC STUDY

For

Lago De San Marcos (TM 5388)
in the County of San Diego

Submitted To:

Lundstrom & Associates

Submitted By:

Darnell & Associates, Inc.

Revised December 7, 2006
Revised January 26, 2006
Revised August 16, 2005
Revised July 21, 2005
Original January 18, 2005

Darnell & ASSOCIATES, INC.
TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

December 7, 2006

Mr. Troy Burns
Lundstrom & Associates
1764 San Diego, Avenue, Suite 200
San Diego, CA 92110

D&A Ref. No.: 040912

Subject: Revised Traffic Impact Analysis for the Proposed Lago De San Marcos Condominium (TM 5388) Project Located at the Southeast Corner of Rancho Santa Fe Road and Lake San Marcos Drive in the San Marcos Area of San Diego County.

Dear Mr. Burns:

In response to the County of San Diego's May 16, 2006 comment letter, Darnell & Associates, Inc. (D&A) has revised our January 26, 2006 traffic impact analysis for the proposed Lago De San Marcos Condominium (TM 5388) Project, located at the southeast corner of Rancho Santa Fe Road and Lake San Marcos Drive in the San Marcos area of San Diego County. This report analyzes the traffic impacts associated with the proposed project on local roadways and intersections, including existing, existing plus project, near term cumulative with and without project; and future conditions with and without project. This iteration of the report assumes that the project will have one access point at the Lake San Marcos Drive/La Tierra Drive intersection.

If you have any questions, please feel free to contact the office.

Sincerely,

DARNELL & ASSOCIATES, INC.

Jessica L. Bavos
Assistant Transportation Planner

Bill E. Darnell P.E.
Firm Principal
RCE 22338

Date Signed: 12/7/06

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Darnell & ASSOCIATES, INC.
TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

MEMORANDUM

DATE: December 7, 2006

TO: Troy Burns, Lundstrom + Associates

FROM: Jessica Bavos

D&A Ref. No: 040912

RE: Lago De San Marcos (TM 5388) – Responses to the County of San Diego's May 16, 2006 Comment Letter

Darnell & Associates, Inc. (D&A) has reviewed the County of San Diego's May 16, 2006 comment letter on our January 26, 2006 traffic study for Lago De San Marcos (TM 5388). The following summarizes our responses to each of the County's comments.

Comment 1: The project applicant/engineer should provide an analysis for traffic volumes that would use the proposed left turn pocket for westbound traffic along San Marcos Drive. The length of the turn pocket needs to be adequate for deceleration and potential queuing.

Response 1: The traffic study has been revised to expand the discussion on the volume of traffic expected to utilize the westbound left turn lane at Lake San Marcos Drive and La Tierra Drive. The proposed 80-foot turn lane will adequately accommodate the projected demand. (See page 33 of our revised report.)

Comment 2: Operationally, it may be preferable to allow right turns out of Driveway "B" so that the driveway can be a standard driveway, and motorists desiring to continue east on Lake San Marcos Drive beyond La Tierra Drive can exit that driveway. The project applicant/engineer should consider a median opening posted for no U-turns for eastbound traffic, or a left turn pocket for eastbound traffic would be installed in order to better accommodate the right turns out of Driveway "B".

Response 2: Driveway "B" has been closed see Figure 2 (Page 4) for new Site Plan, thus this comment is no longer applicable.

Comment 3: The project engineer should state why prohibiting right turns out of Driveway "B" is recommended.

Response 3: Refer to Response 2.

Comment 4: If the project proposes to prohibit exit from Driveway "B", the project engineer should identify what measures will be implemented to prevent motorists from making right turns out of Driveway "B".

Response 4: Refer to Response 2.

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Comment 5: The design of the driveway should provide sufficient room to allow motorists to turn around once they realize that they can not exit from Driveway "B".

Response 5: Refer to Response 2.

Comment 6: The Traffic Study should verify that the 80-foot westbound left turn pocket length (Fig.13) at the Lake San Marcos Drive/La Tierra Drive/Driveway "D" intersection will be sufficient to accommodate the projected vehicle queues.

Response 6: There are 2 peak hour trips expected to use the westbound left turn pocket at the Lake San Marcos Drive/La Tierra Drive/Driveway "D" intersection. The average vehicle requires 25 feet of storage thus the queue at the westbound left turn lane is not expected to exceed 50 feet (i.e. 2 vehicles X 25 feet/vehicle = 50 feet). Therefore, the 80 foot turn pocket will be sufficient to accommodate the project vehicle queues.

Comment 7: Figure 13 was reviewed by the Department of Public Works for concept only. A signing and striping plan will need to be provided once project conditions have been approved. The project applicant/engineer should continue to coordinate with DPW staff in order to finalize the project's conditions of approval and improvement plans. If addressing the above questions/comments results in another change to the project's proposed access plan, the Traffic Study will need to be revised.

Response 7: So Noted.

TRAFFIC STUDY

FOR

LAGO DE SAN MARCOS (TM 5388)
IN THE
COUNTY OF SAN DIEGO

Submitted To:

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1764 SAN DIEGO AVENUE, SUITE 200
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Submitted By:

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December 7, 2006
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EXECUTIVE SUMMARY

The applicant proposes to construct 42 multi-family condominium units at the southeast corner of Rancho Santa Fe Road and Lake San Marcos Drive in the San Marcos area of San Diego County. As this report will show, the proposed project is estimated to generate 252 average daily trips, 20 AM peak hour trips, and 23 PM peak hour trips.

This report will show that under existing conditions, the segment of San Marcos Boulevard between Rancho Santa Fe Road and Bent Avenue operates at LOS E. The proposed project, however, will not significantly impact this segment of San Marcos Boulevard.

Under existing conditions, the Rancho Santa Fe Road/San Marcos Boulevard and Rancho Santa Fe/Melrose Drive intersections operate at LOS E or F during at least one of the peak hours. The addition of the proposed project, however, will not significantly impact these intersections.

Rancho Santa Fe Road between San Marcos Boulevard and Melrose Drive will operate at LOS F and the segment of San Marcos Boulevard between Rancho Santa Fe Road and Bent Avenue will operate at LOS E under 2030 conditions with or without the addition of the proposed project. The proposed project, however, will not significantly impact these segments of Rancho Santa Fe Road and San Marcos Boulevard.

It should be noted that the project will add traffic to County Roadway segments that were not analyzed in this report, but are known to operate below LOS D. Therefore, the project will be part of a cumulative impact to the County roadway segments.

SECTION I – INTRODUCTION

PROJECT DESCRIPTION

The project proposes to develop 42 multi-family condominium units at the southeast corner of Rancho Santa Fe Road and Lake San Marcos Drive in the San Marcos area of San Diego County. Figure 1 shows the vicinity map of the project and Figure 2 shows the proposed site plan.

CONGESTION MANAGEMENT PROGRAM

Based on the approval of Proposition 111 in 1990, regulations require the preparation, implementation, and annual updating of a Congestion Management Program (CMP) in each of California's urbanized counties. The original CMP for the San Diego region was adopted in 1991 and has been updated periodically as an element of the Regional Transportation Plan (RTP). One required element of the CMP is a process to evaluate the transportation and traffic impacts of large projects on the regional transportation system. That process is undertaken by local agencies, project applicants, and traffic consultants through a transportation impact report usually conducted as part of the CEQA project review process. Authority for local land use decisions including project approvals and any required mitigation remains the responsibility of local jurisdictions.

The criteria for which a project is subject to the regulations as set forth in the CMP are determined by the trip generation potential for the project. Currently, the threshold is 2,400 average daily trips (ADT) or 200 peak hour trips. The proposed project will generate 252 average daily trips, 20 AM peak hour trips, and 23 PM peak hour trips (see Section III), and is therefore, not subject to CMP guidelines for traffic impact studies.

SCENARIOS STUDIED

The traffic scenarios analyzed in this report are identified as follows:

Existing Conditions refers to that condition which exists on the ground today, including existing traffic and existing lane configurations at intersections and roadway segments.

Existing Plus Project Conditions refers to that condition which includes the project traffic added onto existing volumes.

Near Term Cumulative Without Project Conditions refers to that condition which includes approved/pending projects in the study area plus the existing traffic volumes with an added ambient growth. This scenario shows the impact without the project.

Near Term Cumulative With Project Conditions refers to that condition which includes approved/pending projects in the sphere of influence of the study area plus the project traffic plus the existing traffic volumes with an ambient growth. This scenario shows the impact with the project.

2030 Base Conditions refers to that condition which would exist in the Year 2030 without the addition of the proposed project. For the Year 2030 it has been assumed that all the roadway segments in the vicinity of the project would be built out to their ultimate Circulation Element classification. This scenario shows the impact without the project.

2030 Plus Project Conditions refers to that condition which will exist in the Year 2030 with the addition of the proposed project. This scenario shows the impact with the project.

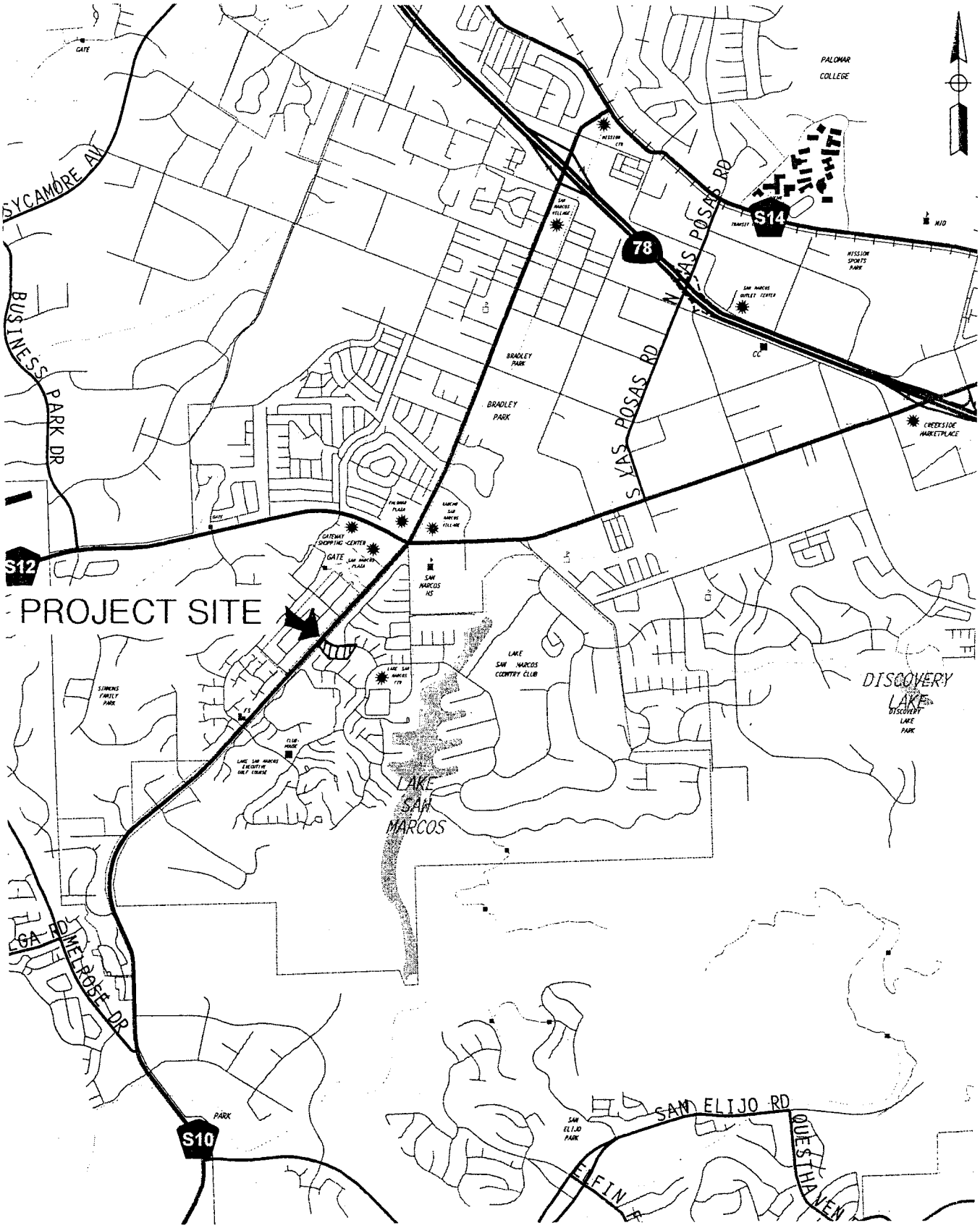

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FIGURE 1

VICINITY MAP

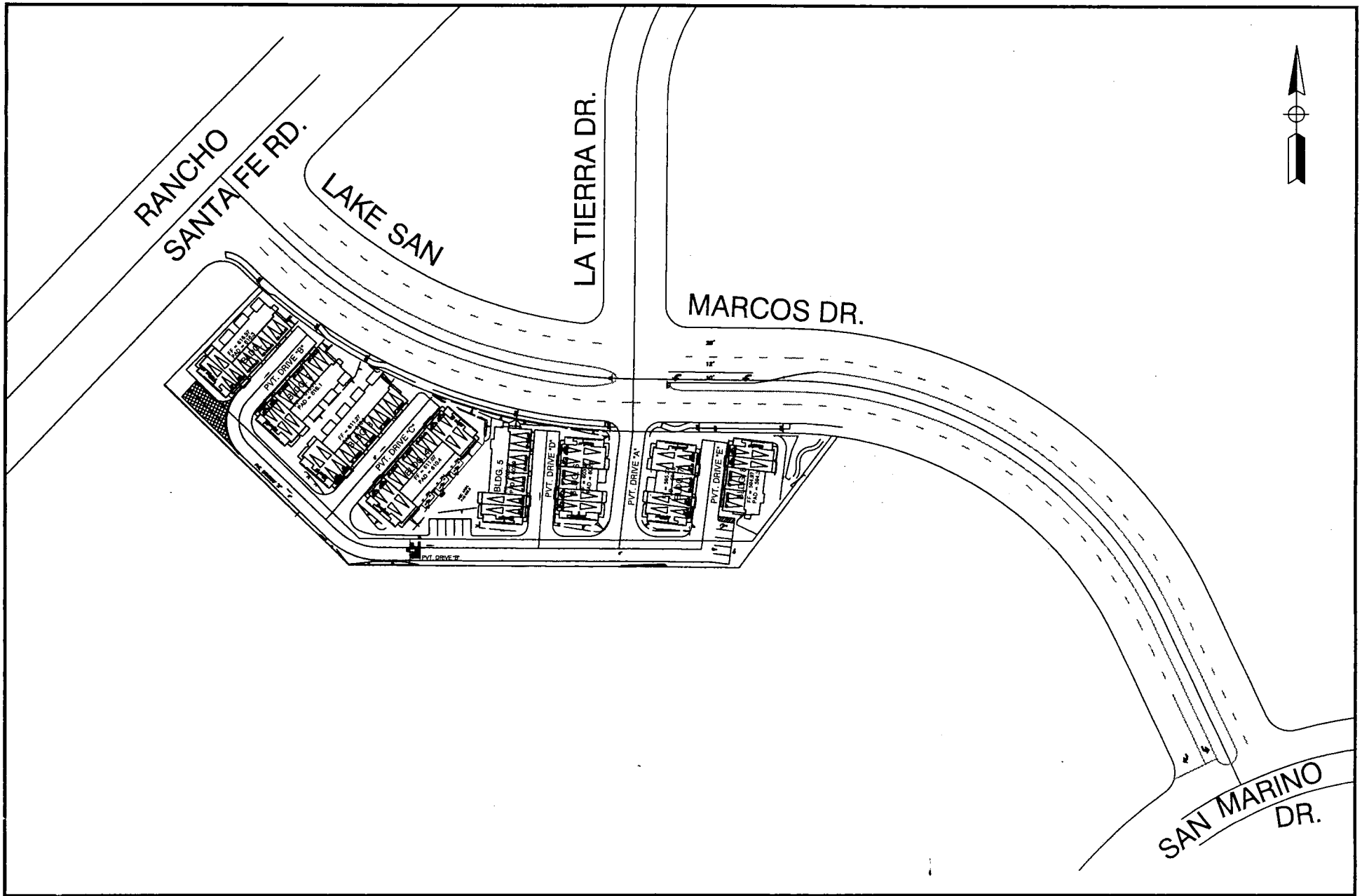

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FIGURE 2

SITE PLAN

LEVEL OF SERVICE

Level of Service (LOS) is a professional industry standard by which the operating conditions of a given roadway segment or intersection are measured. Level of Service is defined on a scale of A to F; where LOS A represents the best operating conditions and LOS F represents the worst operating conditions. LOS A facilities are characterized as having free flowing traffic conditions with no restrictions on maneuvering or operating speeds; traffic volumes are low and travel speeds are high. LOS F facilities are characterized as having forced flow with many stoppages and low operating speeds. Table 1 shows the average daily traffic volumes (ADT), average travel speeds, and delay ranges that are equivalent to each level of service.

Table 1 - Level of Service Ranges

LOS	Intersections		Roadway Segments
	Signalized- Delay (Seconds/Vehicle) [1]	Unsignalized Delay (Seconds/Vehicle) [1]	Average Daily Traffic (ADT) for Major Arterial [2]
A	Less than or Equal to 10.0	Less than or Equal to 10.0	Less Than 24,000
B	10.1 to 20.0	10.1 to 15.0	24,000 to 28,000
C	20.1 to 35.0	15.1 to 25.0	28,000 to 32,000
D	35.1 to 55.0	25.1 to 35.0	32,000 to 36,000
E	55.1 to 80.0	35.1 to 50.0	36,000 to 40,000
F	Greater Than 80.0	Greater Than 50.1	Greater Than 40,000

[1] The delay ranges shown are based on the 2000 Highway Capacity Manual (HCM)
[2] The volume ranges are based on the City of San Marcos Classification of a Major Arterial, the average daily volume ranges for the other roadway classifications has been provided in Appendix A.
LOS = Level of Service

According to page XII-4-15 of the San Diego County General Plan *Public Facility Element* "A LOS 'C', which allows for stable traffic flow with room to maneuver, is a generally accepted level to strive for in new development. ...However, there are some cases where development cannot achieve a LOS "C" on off-site roadways. For instance, there are areas where the existing development pattern precludes the addition of lanes or other mitigation or when the community is opposed to certain improvements to maintain a LOS 'C'. ...In these cases a Level of Service 'D' is acceptable on off-site roadways." A copy of excerpts from the County's *Public Facility Element* can be found in Appendix A.

The City of San Marcos also considers LOS D to be an acceptable level of service on roadway segments and intersections.

ANALYSIS METHODOLOGY

The roadway segment daily LOS was determined by comparing the traffic volumes under each traffic scenario to the capacity of the roadway according to its roadway cross-section and classification. For the purpose of this report, the daily traffic volumes of the roadway segments in the vicinity of the project were compared to the County of San Diego Level of Service classification thresholds or the City of San Marcos Standard Street Classifications, depending on whether the segment was located within the County of San Diego or City of San Marcos. The daily (24 hour) traffic count sheets and a copy of the "Summary of County of San Diego Public Road Standards" and the City of San Marcos Standard Street Classifications are included in Appendix A.

The Synchro Software, version 6.0, was utilized to analyze the morning and afternoon peak hour conditions of the intersections in the project vicinity. The signalized intersection methodology defines LOS based on delay using variables such as lane configuration, traffic volumes, and signal timings. The

unsignalized intersection methodology defines LOS based on the longest delay experienced by any single movement.

Since the Synchro program calculates the average delay per vehicle, there may be instances where the Synchro analysis will show a reduction in delay with the addition of more traffic. This phenomenon occurs when the additional traffic is added to a movement that experiences a shorter amount of delay, thereby decreasing the intersections average delay per vehicle (i.e. a larger amount of vehicles will have to wait a shorter time while only a few vehicles have to wait an extended period of time). It should be noted, however, that even if the addition of traffic results in a lower average intersection delay per vehicle, the total delay at the intersection will gradually increase as more traffic is added to the intersection. The measure of effectiveness utilized within this report is the average intersection delay, not the total intersection delay. It should be noted that the Synchro software is based on the 2000 Highway Capacity Manual (HCM).

It should be noted that the Lake San Marcos Drive/San Marino Drive intersection currently operates as a one-way stop-controlled intersection. Due to community concerns the Lake San Marcos Drive/San Marino Drive intersection was also analyzed as an all-way stop-controlled intersection. Section V provides a detailed discussion on the all-way stop-control warrant analysis.

REPORT ORGANIZATION

Following this section, Section II evaluates the existing roadway characteristics and traffic conditions surrounding the project area. Section III examines the project trip generation and distribution assumptions. Section IV analyzes the traffic for existing plus project, near term cumulative conditions with and without the proposed project, and 2030 conditions with and without the proposed project. Section V addresses project access and on-site circulation. Section VI provides recommended mitigation measures and Section VII summarizes the report's findings and conclusions.

SECTION II - EXISTING CONDITIONS

This section of the traffic study is intended to assess the existing conditions of the roadways and intersections within the vicinity of the project to determine travel flow and/or delay difficulties, if any, that exist prior to adding the traffic generated by the proposed project. The existing conditions analysis establishes a base condition which is used to assess the other scenarios discussed in this report.

Darnell & Associates, Inc. (D&A) conducted a field review of the area surrounding the project in September 2004. The existing roadway geometrics are illustrated in Figure 3.

EXISTING ROADWAY CHARACTERISTICS

The key segments analyzed in the study area are identified below:

Rancho Santa Fe Road: Rancho Santa Fe Road is a north-south four-lane divided circulation element roadway that is located within the City of San Marcos from north of SR-78 to Melrose Drive and located within the City of Carlsbad south of Melrose Drive. Rancho Santa Fe Road has a raised median between SR-78 and Lake San Marcos Drive and it has a painted median between Lake San Marcos Drive and Island Drive. The current cross-section of Rancho Santa Fe Road is equivalent that of a 4-Lane Major Arterial with a capacity of 40,000 ADT at LOS E.

Under the City of San Marcos Urban Street Design, Rancho Santa Fe Road from SR-78 to San Marcos Boulevard is classified as a Prime Arterial with a capacity of 60,000 ADT at LOS E. From San Marcos Boulevard to Melrose Drive, Rancho Santa Fe Road is classified as a 4-Lane Major Arterial with a capacity of 40,000 ADT at LOS E.

San Marcos Boulevard: San Marcos Boulevard is an east-west circulation element roadway that is located within the City of San Marcos. West of Rancho Santa Fe Road and between Discovery Street and Bent Avenue, San Marcos Boulevard is a four-lane divided roadway with a raised median. The current cross-section of these sections of San Marcos Boulevard is equivalent that of a 4-Lane Major Arterial with a capacity of 40,000 ADT at LOS E.

Between Rancho Santa Fe Road and Discovery Street, San Marcos Boulevard has three eastbound lanes and two westbound lanes with a raised median. East of Bent Avenue, San Marcos Boulevard is a six-lane divided roadway with a raised median.

Under the City of San Marcos Urban Street Design, San Marcos Boulevard is classified as a as a Prime Arterial with a capacity of 60,000ADT at LOS E.

Lake San Marcos Drive: Lake San Marcos Drive is an east-west non-circulation element roadway that is located within the jurisdiction of the County of San Diego. Between Rancho Santa Fe Road, San Marino Drive, Lake San Marcos Drive is a four-lane divided roadway with a raised median. The current cross-section of Lake San Marcos Drive is equivalent that of a four-lane Major Arterial with a capacity of 37,000 ADT at LOS E.

La Tierra Drive: La Tierra Drive is a north-south non-circulation element roadway that is located within the jurisdiction of the County of San Diego. The current cross-section of La Tierra Drive is equivalent that of a Residential Street with a recommended capacity of 1,500 ADT at LOS C.

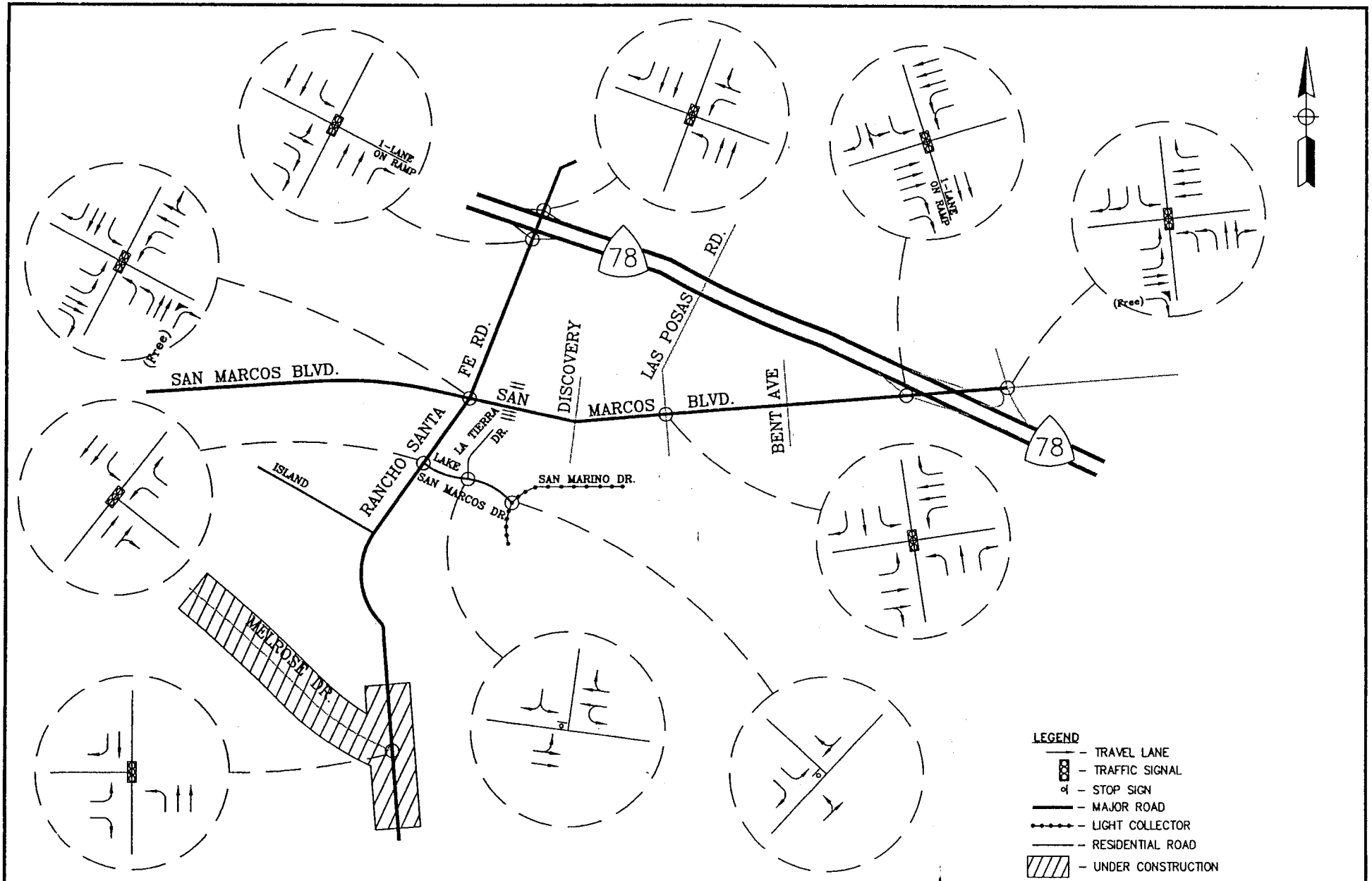

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FIGURE 3

EXISTING CONDITIONS

San Marino Drive: San Marino Drive is a non-circulation element roadway that is located within the jurisdiction of the County of San Diego. The current cross-section of San Marino Drive is equivalent that of a Light Collector with a capacity of 16,200 ADT at LOS E.

ROADWAY SEGMENT DAILY TRAFFIC

Twenty-four (24) hour counts for the project area were conducted at each of the key roadway segments in September 2004. Figure 4 presents the existing conditions traffic volumes used in this analysis. Count summaries are included in Appendix A.

KEY INTERSECTIONS

Figure 3 provides intersection configurations and traffic control for the key intersections. The key intersections analyzed in the study area are identified below:

- Rancho Santa Fe Road/SR-78 Westbound Ramps (signalized);
- Rancho Santa Fe Road/SR-78 Eastbound Ramps (signalized);
- Rancho Santa Fe Road/San Marcos Boulevard (signalized);
- Rancho Santa Fe Road/Lake San Marcos Drive (signalized);
- Ranchos Santa Fe Road/Melrose Drive (signalized);
- San Marcos Boulevard/Las Posas Road (signalized);
- San Marcos Boulevard/SR-78 Eastbound Ramps (signalized);
- San Marcos Boulevard/SR-78 Westbound Ramps (signalized);
- Lake San Marcos Drive/La Tierra Drive (Stop Controlled on Southbound Approach); and
- Lake San Marcos Drive/San Marino Drive (Stop-Controlled on Eastbound Approach).

INTERSECTION TRAFFIC COUNTS

AM/PM peak hour turn counts were collected at each of the key intersections on Tuesday September 21, 2004. Figure 4 presents the existing conditions traffic volumes used in this analysis.

EXISTING LEVEL OF SERVICE CONDITIONS

Roadway Segments

Table 2 summarizes the existing levels of service for the key roadway segments. As can be seen in Table 2, with the exception of San Marcos Boulevard between Rancho Santa Fe Road and Bent Avenue, all key segments analyzed currently operate at an acceptable LOS D or better. San Marcos Boulevard between Rancho Santa Fe Road and Bent Avenue currently operates at LOS E.

Intersections

The results of the Synchro analysis for the existing conditions are summarized in Table 3. As can be seen from Table 3, with the exception of the Rancho Santa Fe Road/San Marcos Boulevard and Rancho Santa Fe/Melrose Drive intersections, all key intersections analyzed currently operate at LOS D or better during both the AM and PM peak hour. The Rancho Santa Fe Road/San Marcos Boulevard intersection currently operates at LOS F during the PM peak hour and the Rancho Santa Fe/Melrose Drive intersection currently operates at LOS E during the AM peak hour. A copy of the Synchro worksheets for existing conditions can be found in Appendix C.

It should be noted that the Lake San Marcos Drive/San Marino Drive intersection operates acceptably with the existing one-way stop-control and with the community preferred all-way stop-control condition.

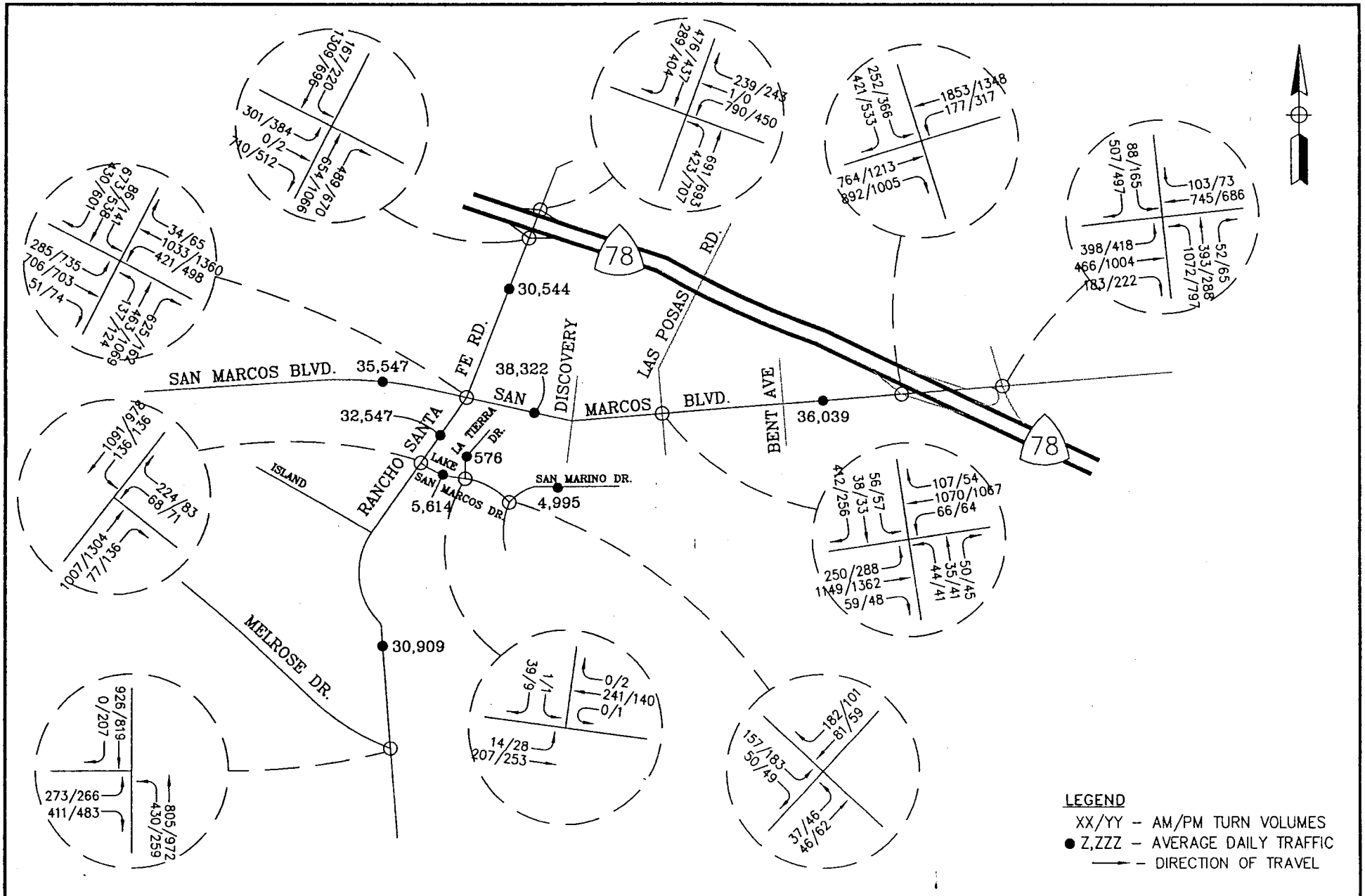

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FIGURE 4

EXISTING TRAFFIC VOLUMES

Table 2 - Existing Roadway Segment Level of Service Summary

Segment	Class	Capacity at LOS E	ADT	V/C	LOS
Rancho Santa Fe Road[(a)]					
SR-78 to San Marcos Blvd.	4MA	40,000	30,544	0.764	C
San Marcos Blvd. To Lake San Marcos Dr	4MA	40,000	32,547	0.814	D
Lake San Marcos Dr. to Melrose Dr.	4MA	40,000	30,909	0.773	C
San Marcos Boulevard[(a)]					
w/o Rancho Santa Fe Rd.	4MA	40,000	35,867	0.897	D
Rancho Santa Fe Rd. to Las Posas Rd.	4MA	40,000	**38,322**	**0.958**	**E**
Las Posas Rd. to Bent Avenue	4MA	40,000	**36,039**	**0.901**	**E**
Lake San Marcos Drive[(b)]					
Rancho Santa Fe Rd. to San Marino Dr.	4MA	37,000	5,614	0.152	A
San Marino Drive[(b)]					
ne/o Lake San Marcos Dr.	LC	16,200	4,995	0.308	C
La Tierra Drive[(b)]					
n/o Lake San Marcos Dr.	RS[(c)]	1,500 at LOS C	576	N/A	< C

(a) Segment is Located in the City of San Marcos
(b) Segment is Located in the County of San Diego
(c) Levels of Service are not typically applied to residential streets as their primary purpose is to serve abutting lots, not carry through traffic. The capacity shown here is the recommended capacity for LOS C. (< C = Less than LOS C)
LOS = Level of Service of the critical movement; V/C= Volume to Capacity Ratio; N/A = Not Applicable
4MA= 4-Lane Major Arterial; LC= Light Collector; RS = Residential Street
w/o = West of; n/o= North of; ne/o= North East of

Table 3 - Existing Intersection Level of Service Summary

Intersections	Critical Movement	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
Rancho Santa Fe @ SR-78 WB Ramps (SIG) [(a)]	Intersection	44.3	D	39.4	D
Rancho Santa Fe @ SR-78 EB Ramps (SIG) [(a)]	Intersection	17.4	B	21.1	C
Rancho Santa Fe @ San Marcos Blvd. (SIG) [(a)]	Intersection	35.2	D	**91.5**	**F**
Rancho Santa Fe @ Lake San Marcos (SIG) [(a)]	Intersection	10.2	B	10.1	B
Rancho Santa Fe @ Melrose (SIG) [(a)]	Intersection	**60.2**	**E**	34.0	C
San Marcos Blvd. @ Las Posas (SIG) [(a)]	Intersection	18.2	B	24.5	C
San Marcos Blvd. @ SR-78 EB Ramps (SIG) [(a)]	Intersection	19.4	B	32.7	C
San Marcos Blvd. @ SR-78 WB Ramps (SIG) [(a)]	Intersection	31.3	C	37.1	D
Lake San Marcos @ La Tierra (OWSC) [(b)]	SB Approach	9.3	A	9.0	A
Lake San Marcos @ San Marino (OWSC) [(b)]	EB Approach	11.7	B	12.0	B
Lake San Marcos @ San Marino (AWSC) [(b)(c)]	EB Approach	9.2	A	9.6	A
	NB Approach	8.7	A	8.9	A
	SB Approach	9.4	A	8.7	A

LOS = Level of Service of the critical movement; Delay is measured in seconds per vehicle
OWSC = One-Way Stop-Controlled; AWSC = All-Way Stop-Controlled; SIG = Signalized; EB = Eastbound; WB = Westbound; SB = Southbound; NB = Northbound
(a) Intersection is Located in the City of San Marcos
(b) Intersection is Located in the County of San Diego
(c) Due to community concerns, this intersection was analyzed with AWSC as well as with the existing OWSC.

SECTION III - PROJECT RELATED CONDITIONS

TRIP GENERATION

The trip generation potential for the project is based on trip generation rates, both daily and peak hour rates, which were taken from the *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region* published by the San Diego Association of Governments (SANDAG) in April 2002.

Table 4 summarizes the trip generation rates and volumes for the proposed project. As shown in Table 4 the proposed Lago De San Marcos project will generate a total of 252 average daily trips, 20 morning peak hour trips, and 23 afternoon peak hour trips.

Table 4 - Trip Generation Rates and Calculations Summary

Trip Generation Rates

Land Use	Daily Trip Rate	AM Peak Hour Trip Rate			PM Peak Hour Trip Rate		
		Total - % of Daily	% In	% Out	Total - % of Daily	% In	% Out
Multi-Family Condominiums	6 Trips/DU	8%	20%	80%	9%	70%	30%

Trip Generation

Land Use	Total # of Units	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			Total	In	Out	Total	In	Out
Multi-Family Condominiums	42	252	20	4	16	23	16	7

DU = Dwelling Unit;
Trip Generation Rates per SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region,* April 2002

TRIP DISTRIBUTION/TRIP ASSIGNMENT

Trip distribution for this site was determined based on the SANDAG 2005 Select Zone forecast. The project distribution percentages are presented in Figure 5. Project traffic was assigned to the adjacent roadway network using the distribution shown in Figure 5. The project related traffic volumes are illustrated in Figure 6.

The impacts associated with the addition of project traffic are discussed in the following section, Section IV.

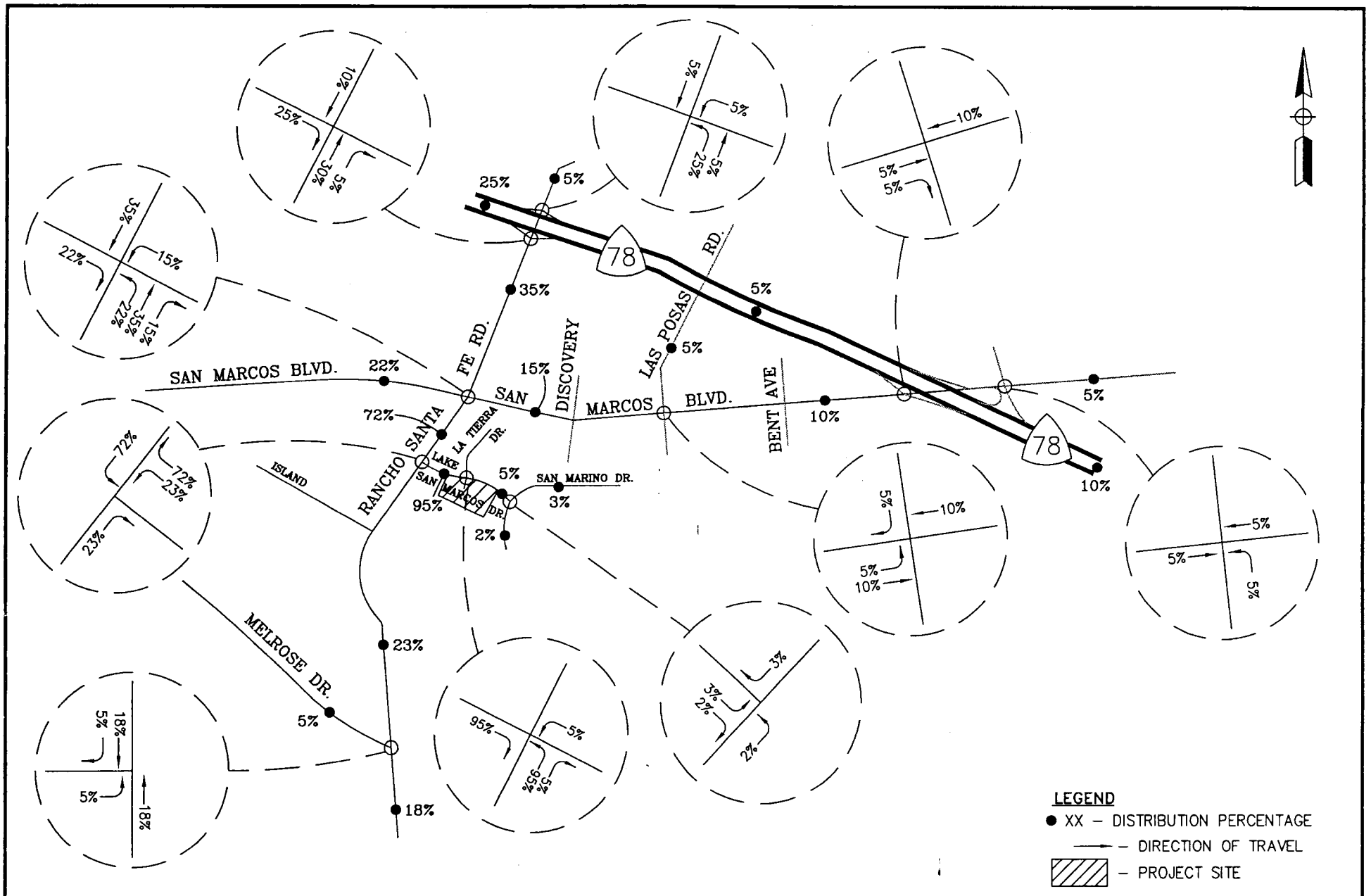

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FIGURE 5

PROJECT TRIP DISTRIBUTION

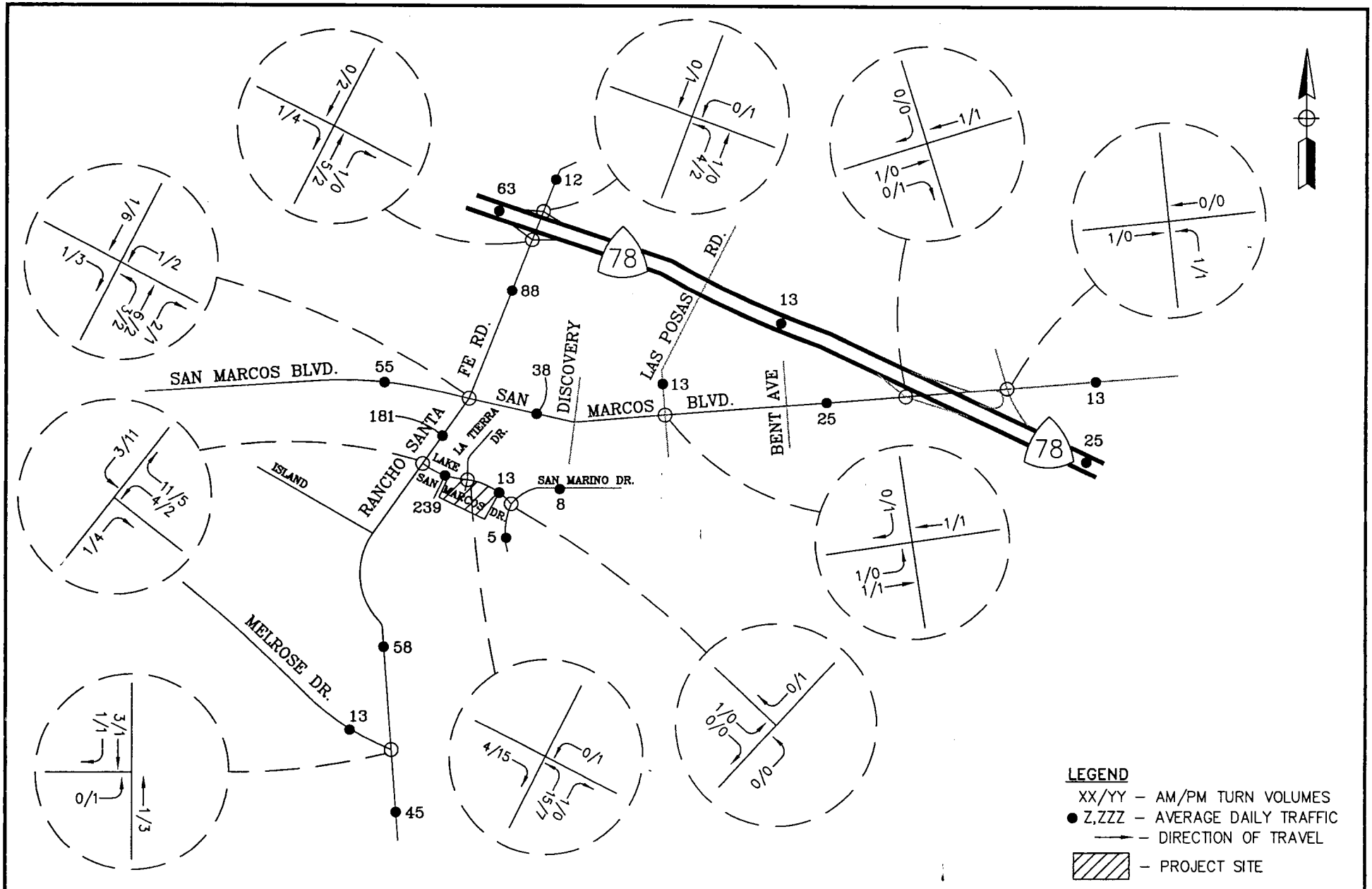

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FIGURE 6

PROJECT TRAFFIC VOLUMES

SECTION IV – IMPACTS

PUBLIC FACILITIES ELEMENT IN COUNTY

According to page XII-4-18 of the *Public Facility Element* for San Diego County, a discretionary project which has a significant impact on roadways will be required, as a condition of approval, to make "improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below 'D' on off-site and on-site abutting Circulation Element roads. New development that would significantly impact congestion on roads at LOS 'E' or 'F', either currently or as a result of the project, will be denied unless improvements are scheduled to increase the LOS to 'D' or better or appropriate mitigation is provided. Appropriate mitigation would include a fair share contribution in the form of road improvements or a fair share contribution to an established program or project. If impacts cannot be mitigated, the project will be denied unless a specific statement of overriding findings is made pursuant to Section 15091(b) and 15093 of the State CEQA Guidelines."

The *Public Facility Element* for the County of San Diego also requires that all on-site Circulation Element roads operate at Level of Service C or better. If the Level of Service at an on-site Circulation Element road is reduced below LOS C, the proposed project must provide appropriate mitigation measures. A copy of excerpts from the County's *Public Facility Element* can be found in Appendix A.

LEVELS OF SIGNIFICANCE STANDARDS

The proposed project is located within the County of San Diego, however, most of the key roadway segments and intersections analyzed in this report fall under the jurisdiction of the City of San Marcos. Therefore, significance was based on the City of San Marcos' thresholds or the County of San Diego's thresholds, depending on which jurisdiction is responsible for the roadway segment and/or intersection. The following summarizes the thresholds of significance utilized by the City of San Marcos and County of San Diego. The guidelines for the roadway segments, signalized intersections, and stop-controlled intersections discussed below were used to determine both direct (project only) and cumulative (approved projects plus project) impacts.

City of San Marcos

For the purpose of this report the *San Diego Traffic Engineers' Council (SANTEC) and the Institute of Transportation Engineers (ITE) Guidelines for Traffic Impact Studies (TIS) in the San Diego Region,* March 2, 2000 Final Draft was utilized to determine the significance of traffic impacts in regards to requiring mitigation for the roadway segments and intersections located with the City of San Marcos. Table 5 summarizes the Measures of Significant Project Traffic Impacts outlined in the *SANTEC/ITE Guidelines for TIS in the San Diego Region*. As can be seen from Table 5, an increase in v/c ratio of 0.02 or less or an increase in delay of 2 seconds or less on roads/intersections operating at LOS D, E or F is considered to be insignificant.

Table 5 - SANTEC/ITE Thresholds of Significance

Level of Service With Project	Allowable Change Due to Project Impacts					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	v/c	Speed (mph)	v/c	Speed (mph)	Delay (Sec)	Delay (min)
D, E, & F (or ramp meter delays above 15 min.)	0.01	1	0.02	1	2	2

Source: *SANTEC/ITE Guidelines TIS in the San Diego Region*, March 2, 2000 Final Draft

County of San Diego

Although the Public Facility Element (PFE) sets standards as to which level of service roadways and intersections must operate within the County (i.e. requires operation of LOS D or better), it does not establish a threshold to evaluate whether a project is significant if it adds traffic to a roadway facility that is currently operating at an unacceptable LOS E or F. Thus, the County's *Guidelines for Determining Significance* (adopted September 26, 2006) was developed to evaluate the significance of traffic impacts on roadways and intersections which are currently operate at LOS E or F. A summary of the County's Guidelines is provided in Table 6. Copies of excerpts from the County's Guidelines are provided in Appendix A.

Table 6 – County of San Diego's Measures of Significant Project Impacts

LOS	Allowable Increase on Congested Roads and Intersections				
	Intersections		Road Segments		
	Signalized	Unsignalized	2-Lane Road	4-Lane Road	6-Lane Road
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement	200 ADT	400 ADT	600 ADT
LOS F	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement	100 ADT	200 ADT	300 ADT

Notes:
– A critical movement is one that is experiencing excessive queues.
– By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
– The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

ADT = Average Daily Traffic; LOS = Level of Service, sec = Seconds of Delay per Vehicle

It should be noted that the significance thresholds summarized in Table 6 are currently only utilized by the County of San Diego to determine if a project has a significant direct and/or future impact. A project is considered to have a significant near term cumulative impact if it adds any traffic to a roadway segment and/or intersection that operates at LOS E or F under near term cumulative conditions.

Consistent with the *Public Facility Element* the criteria described below was only applied to segments and intersections that operate at LOS E or LOS F that are located within the County of San Diego. Therefore, the thresholds outlined in Table 6 were only applied to the segments and intersections along Lake San Marcos Drive, La Tierra Drive, and San Marino Drive.

Roadway Segments

As shown in Table 6, per the County's Guidelines, a project would be considered to have a significant direct traffic volume and/or level of service traffic impact on a road segment if:

- "The additional or redistributed ADT generated by the proposed project will cause an adjacent or nearby County Circulation Element Road to operate below LOS D and will significantly increase congestion as identified in Table [6], and/or

- The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity, and/or

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Circulation Element Road, State Highway, or intersection currently operating at LOS E or LOS F as identified in Table [6]."

As discussed on pages 12 and 13 of the County's *Guidelines for Determining Significance*, an increase of the daily thresholds established for roadways segments operating at LOS E would result in only one additional car every 2.4 minutes per lane while the thresholds established for roadway segments operating at LOS F would result in only one additional car every 4.8 minutes. Therefore, the thresholds identified in Table 6, in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and would thus not constitute a significant impact on the roadway.

The County guidelines also states that "For large projects, controversial projects and/or project which are preparing Environmental Impact Reports, more detailed evaluations to verify the applicability of the significance thresholds for the individual project conditions may be necessary. Additional evaluations may include analysis of vehicle headways, speeds, average gaps, queues, delay, and/or other factors."

Signalized Intersections

At signalized intersections, the project would be considered to have a significant direct volume and/or level of service traffic impact if:

- "The additional or redistributed ADT generated by the proposed project will cause a signalized intersection to operate below LOS D and will significantly increase congestion as identified in Table [6], and/or

- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F as identified in Table [6]."

As discussed on page 15 of the County's *Guidelines for Determining Significance*, an increase in delay of two seconds, the threshold established for signalized intersections operating at LOS E, "…is a small fraction of the typical cycle length for a signalized intersection that ranges between 60 and 120 seconds. The likelihood of increased queues forming due to the additional two seconds of delay is low." Thus, the increase in delay of two (2) seconds, on average, would result in changes to traffic flow that would not be noticeable to the average driver and would thus not constitute a significant impact. Since small changes and disruptions to the traffic flow at a signalized intersection can have a greater effect on the overall intersection operation when the intersection is operating at LOS F, versus LOS E, a more stringent guideline of one (1) second of delay was established for intersections operating at LOS F.

The five (5) peak hour trip threshold, established for the critical movement of a signalized intersection operating at LOS F, when spread out throughout the peak hour, results in an increase of one vehicle every 12 minutes or 720 seconds. This increase would not be noticeable to the average driver because one additional vehicle during a 12 minute interval on average, would clear the traffic signal cycles well within the 12 minute period. Further, even if all five (5) additional peak hour vehicles arrived at the same time, these trips would also, on average, clear the traffic cycle and the existing queue lengths would be re-established. Thus, the increase five (5) peak hour trips to a critical movement at a signalized intersection, on average, would result in changes to traffic flow that would not be noticeable to the average driver and would thus not constitute a significant impact. (See page 15 of the County's *Guidelines for Determining Significance* provided in Appendix A.)

Unsignalized Intersections

At unsignalized intersections, the project would be considered to have a significant direct volume and/or level of service traffic impact if:

- "The proposed project will generate 20 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate below LOS D, or

- The proposed project will generate 20 or more peak hour trips to a critical movement of an unsignalized intersection and the unsignalized intersection currently operates at LOS E, or

- The proposed project will generate 5 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate below LOS E, or

- The proposed project will generate 5 or more peak hour trips to a critical movement of an unsignalized intersection and the unsignalized intersection currently operates at LOS F, or

- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance and/or other factors, it is found that the generation rate less than those specified above would significantly impact the operations of the intersection."

As discussed on page 17 of the County's *Guidelines for Determining Significance,* the addition of 20 peak hour trips to a critical movement, the threshold established for an unsignalized intersection operating at LOS E, would result in an increase of one (1) vehicle every 3.0 minutes or 180 seconds. "Assuming the wait time for a vehicle in the critical movement queue is less than 3.0 minutes, which is typical for LOS E condition, this would not be noticeable to the average driver and would not be considered a significant impact." The five (5) peak hour trip threshold established for an unsignalized intersection operating at LOS F, would result in an increase of one (1) vehicle every 12.0 minutes or 720 seconds. "This typically exceeds the wait time in the queue and would not be noticeable to the average driver." (See page 17 of the County's *Guidelines for Determining Significance* provided in Appendix A.)

EXISTING PLUS PROJECT CONDITIONS

The daily and peak hour turn volumes for existing plus project conditions are illustrated in Figure 7.

Roadway Segments

The roadway segments were analyzed with the traffic generated from the proposed project added to existing traffic volumes. The roadway segments existing plus project daily levels of service are summarized in Table 7.

The San Marcos Boulevard and Rancho Santa Fe Road segments are located in the City of San Marcos jurisdiction thus; SANTEC/ITE guidelines were used to determine significance. As shown in Table 7, the segments of San Marcos Boulevard between Rancho Santa Fe Road and Bent Avenue continue to operate at LOS E under existing plus project conditions. The addition of the proposed project increases the existing volume-to-capacity ratio by 0.001 and is therefore considered to be insignificant. All other roadway segments continue to operate at LOS D or better.

It should be noted that although the County segments of Rancho Santa Fe Road and San Marcos Boulevard were not analyzed in this report, the project will add one (1) ADT to the County segments located outside of the study area. Since this is less than the County thresholds shown in Table 6, the project will not have any direct impacts on the County roadway segments.

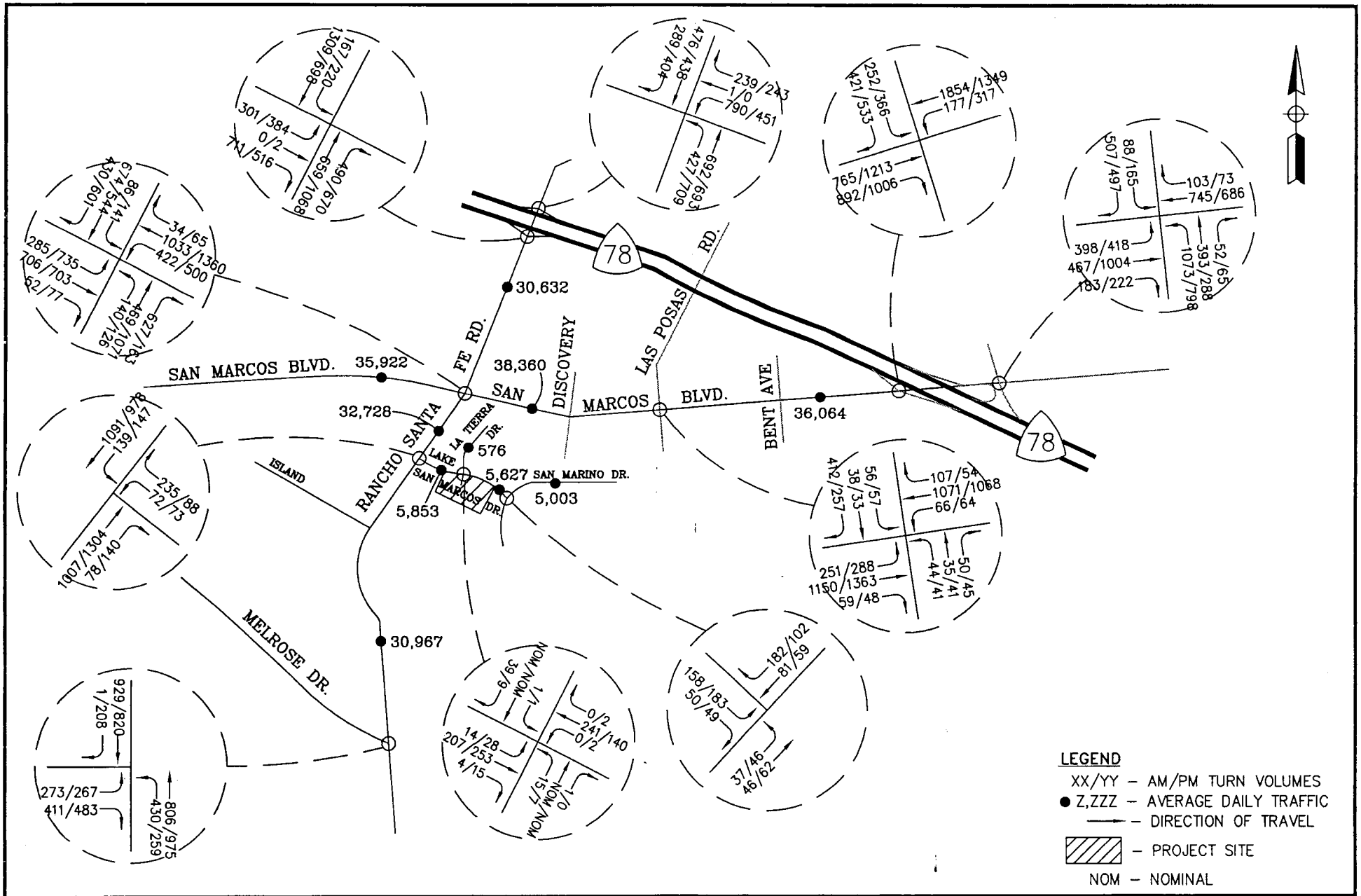

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FIGURE 7

EXISTING PLUS PROJECT TRAFFIC VOLUMES

Table 7 - Existing Plus Project Roadway Segment Level of Service Summary

Segment	Class	Capacity at LOS E	Existing Conditions			Existing Plus Project Conditions					
			ADT	V/C	LOS	Project Traffic	ADT	V/C	LOS	Δ V/C	Sig?
Rancho Santa Fe Road[(a)]											
SR-78 to San Marcos Blvd.	4MA	40,000	30,544	0.764	C	88	30,632	0.766	C	0.002	N/A
San Marcos To Lake San Marcos	4MA	40,000	32,547	0.814	D	181	32,728	0.818	D	0.004	N/A
Lake San Marcos to Melrose	4MA	40,000	30,909	0.773	C	58	30,967	0.774	C	0.001	N/A
San Marcos Boulevard[(a)]											
w/o Rancho Santa Fe	4MA	40,000	35,867	0.897	D	55	35,922	0.898	D	0.001	N/A
Rancho Santa Fe to Las Posas	4MA	40,000	**38,322**	**0.958**	**E**	**38**	**38,360**	**0.959**	**E**	**0.001**	**NO**
Las Posas Rd. to Bent	4MA	40,000	**36,039**	**0.901**	**E**	**25**	**36,064**	**0.902**	**E**	**0.001**	**NO**
Lake San Marcos Drive[(b)]											
Rancho Santa Fe to La Tierra	4MA	37,000	5,614	0.152	A	239	5,853	0.158	A	0.006	N/A
La Tierra to San Marino	4MA	37,000	5,614	0.152	A	13	5,627	0.152	A	0.000	N/A
San Marino Drive[(b)]											
ne/o Lake San Marcos	LC	16,200	4,995	0.308	C	8	5,003	0.309	C	0.001	N/A
La Tierra Drive[(b)]											
n/o Lake San Marcos	RS[(c)]	1,500 at LOS C	576	N/A	< C	0	576	N/A	< C	N/A	N/A

(a) Segment is Located in the City of San Marcos;

(b) Segment is Located in the County of San Diego

(c) Levels of Service are not typically applied to residential streets as their primary purpose is to serve abutting lots, not carry through traffic. The capacity shown here is the recommended capacity for LOS C. (< C = Less than LOS C)

LOS = Level of Service of the critical movement; V/C= Volume to Capacity Ratio; Δ V/C = Increase (Decrease) in volume-to-capacity ratio due to the addition of the project; N/A = Not Applicable; 4MA= 4-Lane Major Arterial; LC= Light Collector; RS = Residential Street; w/o = West of; n/o= North of; ne/o= North East of

Sig? = Significance based on the SANTEC/ITE Guidelines for the segments in the City of San Marcos and the County's Draft Guidelines for Determining Significance for the segments located in the County of San Diego

Intersections

The intersections were analyzed with the traffic generated from the proposed project added to existing traffic volumes. The intersections' levels of service for existing plus project conditions are summarized in Table 8. A copy of the Synchro analysis worksheets for existing plus project conditions can be found in Appendix D.

The intersections located within the City of San Marcos were analyzed using the SANTEC/ITE guidelines to determine significance. As shown in Table 8, with the exception of the Rancho Santa Fe Road/San Marcos Boulevard and Rancho Santa Fe/Melrose Drive intersections, all key intersections analyzed continue to operate at LOS D or better during both the AM and PM peak hour under existing plus project conditions. The Rancho Santa Fe Road/San Marcos Boulevard intersection operates at LOS F during the PM peak hour and the Rancho Santa Fe/Melrose Drive intersection operates at LOS E during the AM peak hour. The addition of the proposed project increases the existing delay at these intersections by 0.3 seconds or less and is, therefore, considered to be insignificant.

It should be noted that the Lake San Marcos Drive/San Marino Drive intersection operates acceptably with the existing one-way stop-control and with the community preferred all-way stop-control condition.

NEAR TERM CUMULATIVE WITHOUT PROJECT CONDITIONS

Through research through the County of San Diego and City of San Marcos, it was determined that there was one (1) other approved project (the University Commons) that would be adding traffic to the same roadway segments and intersections as the proposed project. Katz, Okitsu, and Associates (KOA) conducted a traffic study that addressed the proposed modifications to the approved University Commons project. However, for the purpose of this report, the near term cumulative conditions included the approved version of the University Commons project. (Excerpts from the KOA report are provided in Appendix B.)

To account for any additional projects that may come on-line between now and the time the proposed project is developed, D&A also added an ambient growth for a period of two years. The ambient growth factor utilized was the average yearly growth between the SANDAG 2030 Combined North County Model (CNCM) forecast volumes and the existing volumes.

The near term cumulative without project traffic daily and peak hour traffic volumes are illustrated in Figure 8.

NEAR TERM CUMULATIVE WITH PROJECT CONDITIONS

The proposed project was added onto the near term cumulative without project traffic volumes. The resulting near term cumulative with project daily and peak hour traffic volumes are illustrated in Figure 9.

Roadway Segments

The roadway segments were analyzed under near term cumulative conditions with and without the proposed project. The roadway segments daily levels of service are summarized in Table 9. As can be seen in Table 9, the following roadway segments operate at LOS E or F under near term cumulative conditions with or without the proposed project: Rancho Santa Fe Road from San Marcos Boulevard to Lake San Marcos Drive; and San Marcos Boulevard from west of Rancho Santa Fe Road to Bent Avenue.

The proposed project increases the near term cumulative without project volume-to-capacity ratio on these segments by 0.004 or less. This is less than the allowable 0.02 increase allowed per the City of San Marcos levels of significance, therefore, the proposed project is considered to be insignificant.

Table 8 - Existing Plus Project Intersection Level of Service Summary

Intersections	Critical Movement	Existing Conditions				Existing Plus Project Conditions									
		AM Peak Hour		PM Peak Hour		AM Peak Hour					PM Peak Hour				
		Delay	LOS	Delay	LOS	Delay	LOS	Δ Delay	Proj. Traffic	Sig?	Delay	LOS	Δ Delay	Proj. Traffic	Sig?
Rancho Santa Fe @ SR-78 WB Ramps (SIG) [(a)]	Intersection	44.3	D	39.4	D	44.5	D	0.2	5	N/A	39.5	D	0.1	4	N/A
Rancho Santa Fe @ SR-78 EB Ramps (SIG) [(a)]	Intersection	17.4	B	21.1	C	17.4	B	0.0	7	N/A	21.1	C	0.0	8	N/A
Rancho Santa Fe @ San Marcos Blvd. (SIG) [(a)]	Intersection	35.2	D	**91.5**	**F**	35.3	D	0.1	14	N/A	**91.5**	**F**	**0.0**	**16**	**NO**
Rancho Santa Fe @ Lake San Marcos (SIG) [(a)]	Intersection	10.2	B	10.1	B	10.4	B	0.2	19	N/A	10.5	B	0.4	22	N/A
Rancho Santa Fe @ Melrose (SIG) [(a)]	Intersection	**60.2**	**E**	34.0	C	**60.5**	**E**	**0.3**	**5**	**NO**	34.1	C	0.1	6	N/A
San Marcos Blvd. @ Las Posas (SIG) [(a)]	Intersection	18.2	B	24.5	C	18.2	B	0.0	3	N/A	24.5	C	0.0	3	N/A
San Marcos Blvd. @ SR-78 EB Ramps (SIG) [(a)]	Intersection	19.4	B	32.7	C	19.4	B	0.0	2	N/A	32.7	C	0.0	2	N/A
San Marcos Blvd. @ SR-78 WB Ramps (SIG) [(a)]	Intersection	31.3	C	37.1	D	31.3	C	0.0	2	N/A	37.1	D	0.0	1	N/A
Lake San Marcos @ La Tierra (TWSC) [(b)]	SB Approach	9.3	A	9.0	A	9.3	A	0.0	0	N/A	9.0	A	0.0	0	N/A
	NB Approach	-	-	-	-	12.6	B	-	16		12.4	B	-	7	
Lake San Marcos @ San Marino (OWSC) [(b)]	EB Approach	11.7	B	12.0	B	11.7	B	0.0	1	N/A	12.0	B	0.0	0	N/A
Lake San Marcos @ San Marino (AWSC) [(b)(c)]	EB Approach	9.2	A	9.6	A	9.2	A	0.0	1	N/A	9.6	A	0.0	0	N/A
	NB Approach	8.7	A	8.9	A	8.7	A	0.0	0		8.9	A	0.0	0	
	SB Approach	9.4	A	8.7	A	9.4	A	0.0	0		8.7	A	0.0	1	

(a) Intersection is Located in the City of San Marcos
(b) Intersection is Located in the County of San Diego
(c) Due to community concerns, this intersection was analyzed with AWSC as well as with the existing OWSC.
LOS = Level of Service of the critical movement; Delay is measured in seconds per vehicle; Δ Delay = Increase (Decrease) in Delay;
OWSC = One-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; AWSC = All-Way Stop-Controlled; SIG = Signalized;
EB = Eastbound; WB = Westbound; SB = Southbound; NB = Northbound;
Proj. Traffic =At signalized intersections it is the total traffic the project adds to the intersection, at unsignalized intersections it is the volume of traffic the project assigns to the critical move/approach
Sig? = Significance based on the SANTEC/ITE Guidelines for the intersection in the City of San Marcos and the County's Draft Guidelines for Determining Significance for the intersections located in the County of San Diego

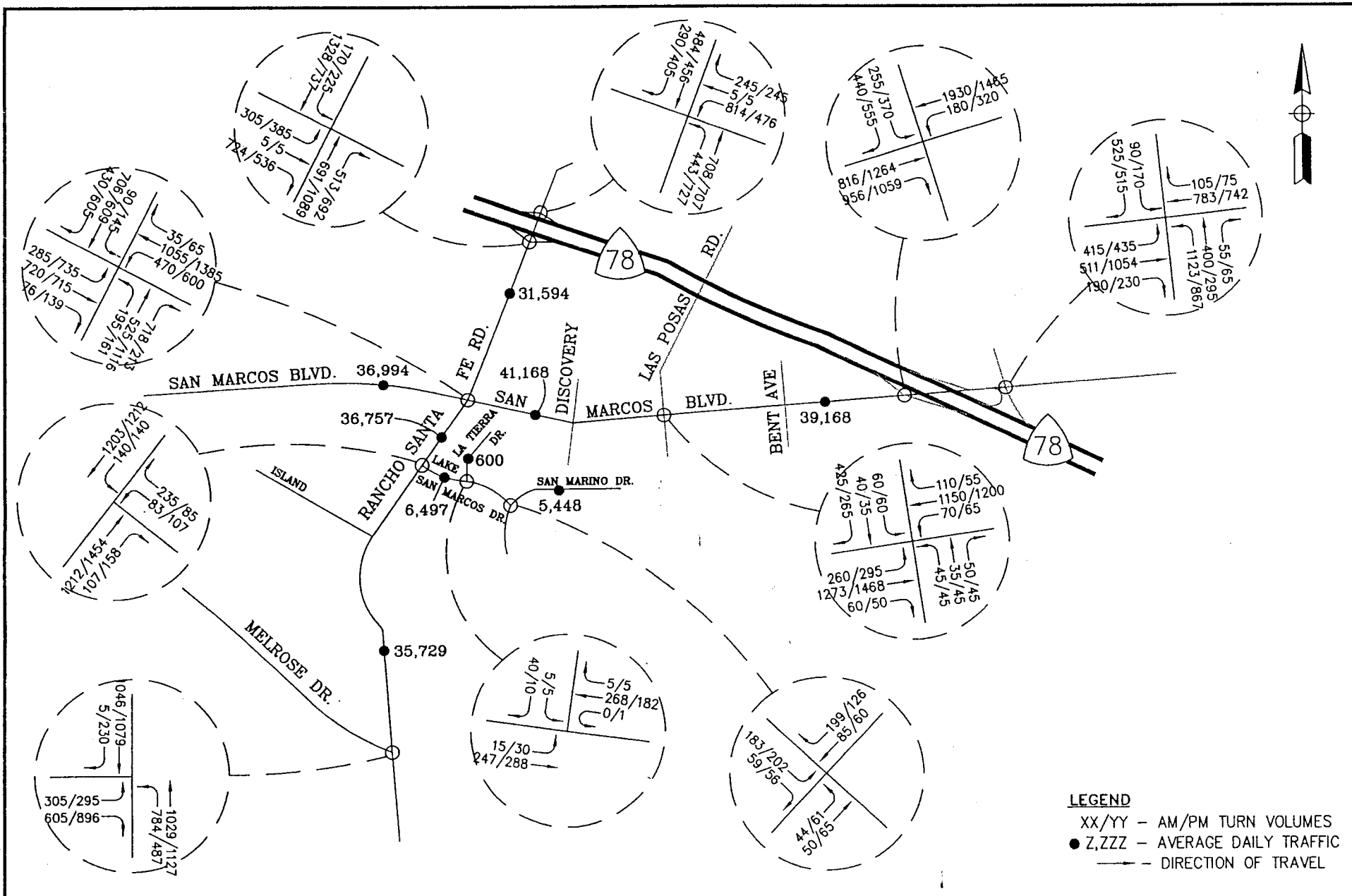

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FIGURE 8

NEAR TERM CUMULATIVE WITHOUT PROJECT

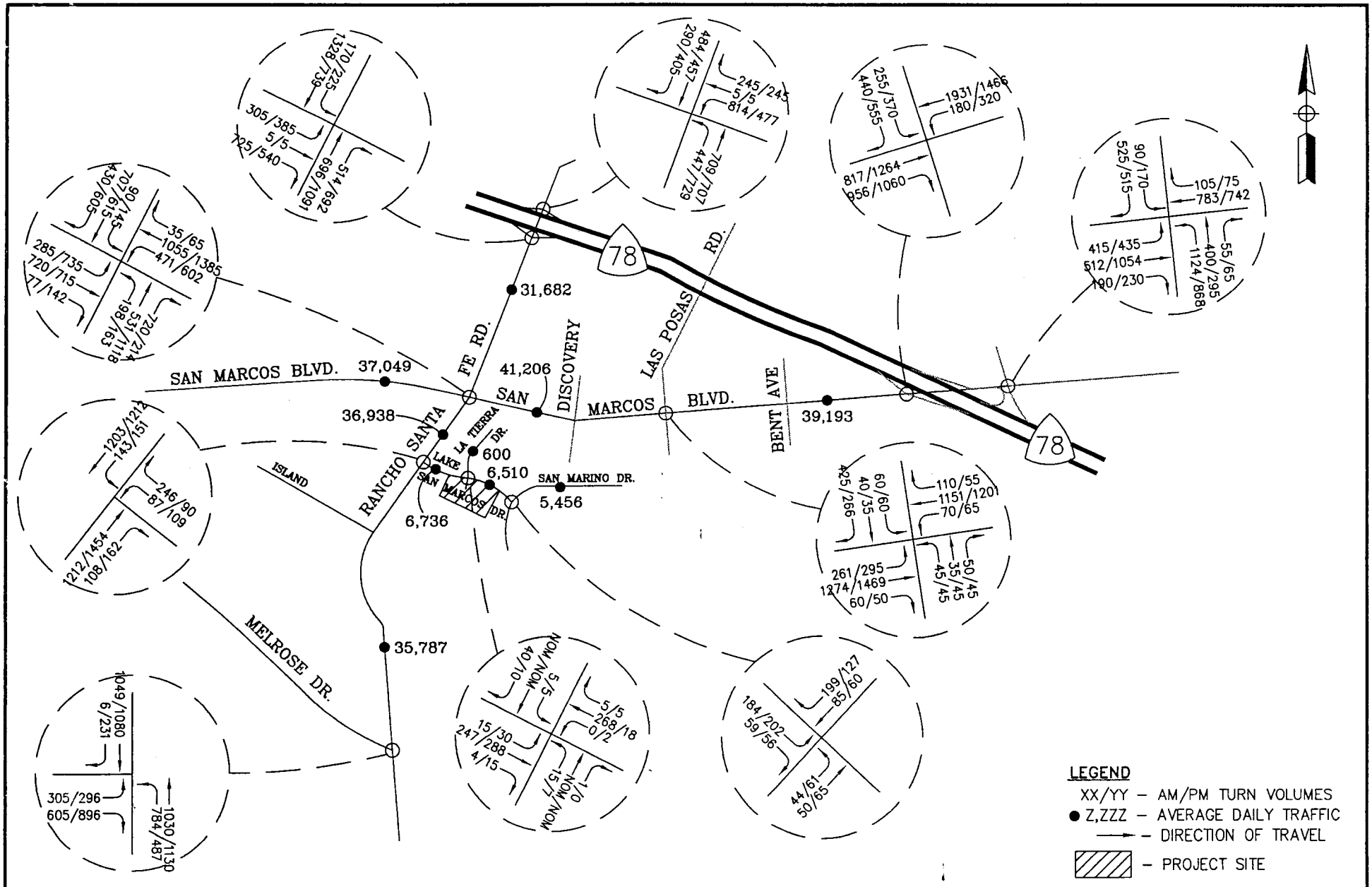

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FIGURE 9

NEAR TERM CUMULATIVE WITH PROJECT

Table 9 - Near Term Cumulative Roadway Segment Level of Service Summary

Roadway Segment	Capacity	Existing (A)			Near Term Cum. Without Project (B)			Near Term Cum. With Project (C)			Cumulative Contribution[1] (C) - (A)		Project's Contribution[2] (C) - (B)		
		ADT	V/C	LOS	ADT	V/C	LOS	ADT	V/C	LOS	Increase In ADT	Δ V/C	Project Traffic	Δ V/C	Significant[3]
Rancho Santa Fe Road[a]															
SR-78 to San Marcos Blvd.	40,000	30,544	0.764	C	31,594	0.790	C	31,682	0.792	C	1,138	0.028	88	0.002	N/A
San Marcos To Lake San Marcos	40,000	32,547	0.814	D	**36,757**	**0.919**	**E**	**36,938**	**0.923**	**E**	**4,391**	**0.109**	**181**	**0.004**	**NO**
Lake San Marcos to Melrose	40,000	30,909	0.773	C	35,729	0.893	D	35,787	0.895	D	4,878	0.122	58	0.002	N/A
San Marcos Boulevard[a]															
w/o Rancho Santa Fe	40,000	35,867	0.897	D	**36,994**	**0.925**	**E**	**37,049**	**0.926**	**E**	**1,182**	**0.029**	**55**	**0.001**	**NO**
Rancho Santa Fe to Las Posas.	40,000	**38,322**	**0.958**	**E**	**41,168**	**1.029**	**F**	**41,206**	**1.030**	**F**	**2,884**	**0.072**	**38**	**0.001**	**NO**
Las Posas Rd. to Bent	40,000	**36,039**	**0.901**	**E**	**39,168**	**0.979**	**E**	**39,193**	**0.980**	**E**	**3,154**	**0.079**	**25**	**0.001**	**NO**
Lake San Marcos Drive[b]															
Rancho Santa Fe to La Tierra	37,000	5,614	0.152	A	6,497	0.176	A	6,736	0.182	A	1,122	0.030	239	0.006	N/A
La Tierra to San Marino	37,000	5,614	0.152	A	6,497	0.176	A	6,510	0.176	A	896	0.024	13	0.000	N/A
San Marino Drive[b]															
ne/o Lake San Marcos	16,200	4,995	0.308	C	5,448	0.336	C	5,456	0.337	C	461	0.029	8	0.001	N/A
La Tierra Drive[b]															
n/o Lake San Marcos	1,500	576	N/A	< C	600	N/A	<C	600	N/A	<C	24	N/A	0	N/A	N/A

(1) Change in existing conditions due to the cumulative projects including the proposed project (i.e. the difference between near term cumulative with project and existing conditions)
(2) The incremental change in conditions associated with the proposed project (i.e. the difference between near term cumulative with project and near term cumulative without project conditions)
(3) Project Impacts assess whether the project traffic itself is significant
(a) Segment is Located in the City of San Marcos; (b) Segment is Located in the County of San Diego
(c) Levels of Service are not typically applied to residential streets. The capacity shown here is the recommended capacity for LOS C. (< C = Less than LOS C)
LOS = Level of Service of the critical movement; V/C= Volume to Capacity Ratio; Δ V/C = Increase (Decrease) in volume-to-capacity ratio due to the addition of the project;
N/A = Not Applicable; 4MA= 4-Lane Major Arterial; LC= Light Collector; RS = Residential Street; w/o = West of; n/o= North of; n/o= North of
Sig? = Significance based on the SANTEC/ITE Guidelines for the segments in the City of San Marcos and the County's Draft Guidelines for Determining Significance for the segments located in the County of San Diego

It should be noted that although the County segments of Rancho Santa Fe Road and San Marcos Boulevard were not analyzed in this report, the project will add one (1) ADT to the County segments located outside the study area that are projected to operate at unacceptable levels of service. Therefore, the project will be part of cumulative impact to the County roadway segments.

All other roadway segments continue to operate at LOS D or better under near term cumulative with and without project conditions.

Intersections

The intersections were analyzed under near term cumulative conditions with and without the proposed project. The intersections' levels of service for near term cumulative conditions are summarized in Tables 10 and 11 for the AM and PM peak hours, respectively. A copy of the Synchro analysis worksheets for near term cumulative conditions can be found in Appendix E and F.

The intersections located within the City of San Marcos were analyzed using the SANTEC/ITE guidelines to determine significance. As shown in Tables 10 and 11, with the exception of the Rancho Santa Fe Road/San Marcos Boulevard and Rancho Santa Fe/Melrose Drive intersections, all key intersections analyzed continue to operate at LOS D or better during both the AM and PM peak hour under near term cumulative with project conditions. The Rancho Santa Fe Road/San Marcos Boulevard intersection operates at LOS F during the PM peak hour and the Rancho Santa Fe/Melrose Drive intersection operates at LOS F during the AM peak hour and PM peak hours under near term cumulative conditions with or without the addition of the proposed project. The addition of the proposed project increases the near term cumulative without project delay at these intersections by 0.3 seconds or less and is, therefore, considered to be insignificant.

It should be noted that the Lake San Marcos Drive/San Marino Drive intersection operates acceptably with existing the one-way stop-control and with the community preferred all-way stop-control condition.

2030 CONDITIONS

Under 2030 conditions, it was assumed that all roadway segments were built out to their ultimate Circulation Element Classification. Figure 10 provides an illustration of the roadway segment classifications that were assumed to exist under 2030 conditions.

2030 forecast volumes were obtained from SANDAG's 2030 Combined North County Model (CNCM). SANDAG's 2030 forecast included the development of the proposed project. Therefore, to obtain the 2030 without project traffic volumes, the proposed project was subtracted from the SANDAG forecast volumes. Figure 11 illustrates the 2030 without project daily traffic volumes and Figure 12 illustrates the 2030 with project daily traffic volumes. The 2030 roadway segment level of service analysis is summarized in Table 12.

The San Marcos Boulevard and Rancho Santa Fe Road segments are located in the City of San Marcos jurisdiction thus; SANTEC/ITE guidelines were used to determine significance. As can be seen in Table 12, with the exception of Rancho Santa Fe Road between San Marcos Boulevard and Melrose Drive and San Marcos Boulevard between Rancho Santa Fe Road and Bent Avenue, all key roadway segments operate at LOS C or better under 2030 conditions with or without the addition of the proposed project. Rancho Santa Fe Road between San Marcos Boulevard and Melrose Drive operates at LOS F and the segment of San Marcos Boulevard between Rancho Santa Fe Road and Bent Avenue operates at LOS E under 2030 conditions with or without the addition of the proposed project. The proposed project increases the 2030 without project volume-to-capacity ratio on these segments by 0.005 or less and is therefore, considered to be insignificant.

Table 10 – AM Peak Hour Near Term Cumulative Intersection Level of Service Summary

Intersection	Critical Movement	Existing (A)		Near Term Cumulative Without Project (B)		Near Term Cumulative With Project (C)		Cumulative Contribution[1] (C) - (A)		Project's Contribution [2] (C) - (B)		
		Delay	LOS	Delay	LOS	Delay	LOS	Δ Delay	Cum. Traffic	Δ Delay	Proj. Traffic	Cumulatively Considerable? [3]
Rancho Santa Fe @ SR-78 WB Ramps (SIG) [a]	Intersection	44.3	D	48.6	D	49.0	D	4.7	85	0.4	5	N/A
Rancho Santa Fe @ SR-78 EB Ramps (SIG) [a]	Intersection	17.4	B	17.7	B	17.7	B	0.3	113	0.0	7	N/A
Rancho Santa Fe @ San Marcos Blvd. (SIG) [a]	Intersection	35.2	D	38.0	D	38.1	D	2.9	375	0.1	14	N/A
Rancho Santa Fe @ Lake San Marcos (SIG) [a]	Intersection	10.2	B	11.8	B	12.0	B	1.8	396	0.2	19	N/A
Rancho Santa Fe @ Melrose (SIG) [a]	Intersection	**60.2**	**E**	**193.0**	**F**	**193.3**	**F**	**133.1**	**934**	**0.3**	**5**	**NO**
San Marcos Blvd. @ Las Posas (SIG)[a]	Intersection	18.2	B	18.6	B	18.6	B	0.4	245	0.0	3	N/A
San Marcos Blvd. @ SR-78 EB Ramps (SIG) [a]	Intersection	19.4	B	19.8	B	19.8	B	0.4	220	0.0	2	N/A
San Marcos Blvd. @ SR-78 WB Ramps (SIG) [a]	Intersection	31.3	C	32.6	C	32.6	C	1.3	192	0.0	2	N/A
Lake San Marcos @ La Tierra (TWSC) [b]	SB Approach	9.3	A	9.7	A	9.8	A	0.5	5	0.1	0	N/A
	NB Approach	-	-	-	-	13.5	B	-	16	-	16	
Lake San Marcos @ San Marino (OWSC) [b]	EB Approach	11.7	B	12.5	B	12.5	B	0.8	36	0.0	1	N/A
Lake San Marcos @ San Marino (AWSC) [b][c]	EB Approach	9.2	A	9.8	A	9.8	A	0.6	36	0.0	1	N/A
	NB Approach	8.7	A	9.0	A	9.0	A	0.3	11	0.0	0	
	SB Approach	9.4	A	9.9	A	10.0	A	0.6	21	0.1	0	

(1) Change in existing conditions due to the cumulative projects including the proposed project (i.e. the difference between near term cumulative with project and existing conditions)
(2) The incremental change in conditions associated with the proposed project (i.e. the difference between near term cumulative with project and near term cumulative without project conditions)
(3) Project Impacts assess whether the project traffic itself is a considerable portion of the total cumulative impacts
(a) Intersection is Located in the City of San Marcos
(b) Intersection is Located in the County of San Diego
(c) Due to community concerns, this intersection was analyzed with AWSC as well as with the existing OWSC.
LOS = Level of Service of the critical movement; Delay is measured in seconds per vehicle; Δ Delay = Increase (Decrease) in Delay; > 15 min = Delay exceeds 15 minutes (1,800 seconds)
OWSC = One-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; AWSC = All-Way Stop-Controlled; SIG = Signalized; EB = Eastbound; WB = Westbound; SB = Southbound; NB = Northbound;
Proj. Traffic = At signalized intersections it is the total traffic the project adds to the intersection, at unsignalized intersections it is the volume of traffic the project assigns to the critical move/approach
Sig? = Significance based on the SANTEC/ITE Guidelines for the intersection in the City of San Marcos and the County's Draft Guidelines for Determining Significance for the intersections located in the County of San Diego

Table 11 - PM Peak Hour Near Term Cumulative Intersection Level of Service Summary

Intersection	Critical Movement	Existing (A)		Near Term Cumulative Without Project (B)		Near Term Cumulative With Project (C)		Cumulative Contribution[1] (C) - (A)		Project's Contribution [2] (C) - (B)		
		Delay	LOS	Delay	LOS	Delay	LOS	Δ Delay	Cum. Traffic	Δ Delay	Proj. Traffic	Cumulatively Considerable? [3]
Rancho Santa Fe @ SR-78 WB Ramps (SIG) [a]	Intersection	39.4	D	42.4	D	42.7	D	3.3	91	0.3	4	N/A
Rancho Santa Fe @ SR-78 EB Ramps (SIG) [a]	Intersection	21.1	C	21.5	C	21.6	C	0.5	127	0.1	8	N/A
Rancho Santa Fe @ San Marcos Blvd. (SIG) [a]	Intersection	**91.5**	**F**	**94.0**	**F**	**94.2**	**F**	**2.7**	**434**	**0.2**	**16**	**NO**
Rancho Santa Fe @ Lake San Marcos (SIG) [a]	Intersection	10.1	B	12.6	B	13.0	B	2.9	470	0.4	22	N/A
Rancho Santa Fe @ Melrose (SIG) [a]	Intersection	34.0	C	**144.3**	**F**	**144.3**	**F**	**110.3**	**1114**	**0.0**	**6**	**NO**
San Marcos Blvd. @ Las Posas (SIG)[a]	Intersection	24.5	C	24.6	C	24.6	C	0.1	275	0.0	3	N/A
San Marcos Blvd. @ SR-78 EB Ramps (SIG) [a]	Intersection	32.7	C	33.3	C	33.3	C	0.6	253	0.0	2	N/A
San Marcos Blvd. @ SR-78 WB Ramps (SIG) [a]	Intersection	37.1	D	38.4	D	38.4	D	1.3	234	0.0	1	N/A
Lake San Marcos @ La Tierra (TWSC) [b]	SB Approach	9.0	A	9.9	A	10.1	B	1.1	5	0.2	0	N/A
	NB Approach	-	-	-	-	13.3	B	-	7	-	7	
Lake San Marcos @ San Marino (OWSC) [b]	EB Approach	12.0	B	13.1	B	13.1	B	1.1	26	0.0	0	N/A
Lake San Marcos @ San Marino (AWSC) [b][c]	EB Approach	9.6	A	10.2	B	10.2	B	0.6	26	0.0	0	N/A
	NB Approach	8.9	A	9.4	A	9.4	A	0.5	18	0.0	0	
	SB Approach	8.7	A	9.1	A	9.1	A	0.4	27	0.0	1	

(1) Change in existing conditions due to the cumulative projects including the proposed project (i.e. the difference between near term cumulative with project and existing conditions)
(2) The incremental change in conditions associated with the proposed project (i.e. the difference between near term cumulative with project and near term cumulative without project conditions)
(3) Project Impacts assess whether the project traffic itself is a considerable portion of the total cumulative impacts
(a) Intersection is Located in the City of San Marcos
(b) Intersection is Located in the County of San Diego
(c) Due to community concerns, this intersection was analyzed with AWSC as well as with the existing OWSC.
LOS = Level of Service of the critical movement; Delay is measured in seconds per vehicle; Δ Delay = Increase (Decrease) in Delay; > 15 min = Delay exceeds 15 minutes (1,800 seconds)
OWSC = One-Way Stop-Controlled; TWSC = Two-Way Stop-Controlled; AWSC = All-Way Stop-Controlled; SIG = Signalized; EB = Eastbound; WB = Westbound; SB = Southbound; NB = Northbound;
Proj. Traffic = At signalized intersections it is the total traffic the project adds to the intersection, at unsignalized intersections it is the volume of traffic the project assigns to the critical move/approach
Sig? = Significance based on the SANTEC/ITE Guidelines for the intersection in the City of San Marcos and the County's Draft Guidelines for Determining Significance for the intersections located in the County of San Diego

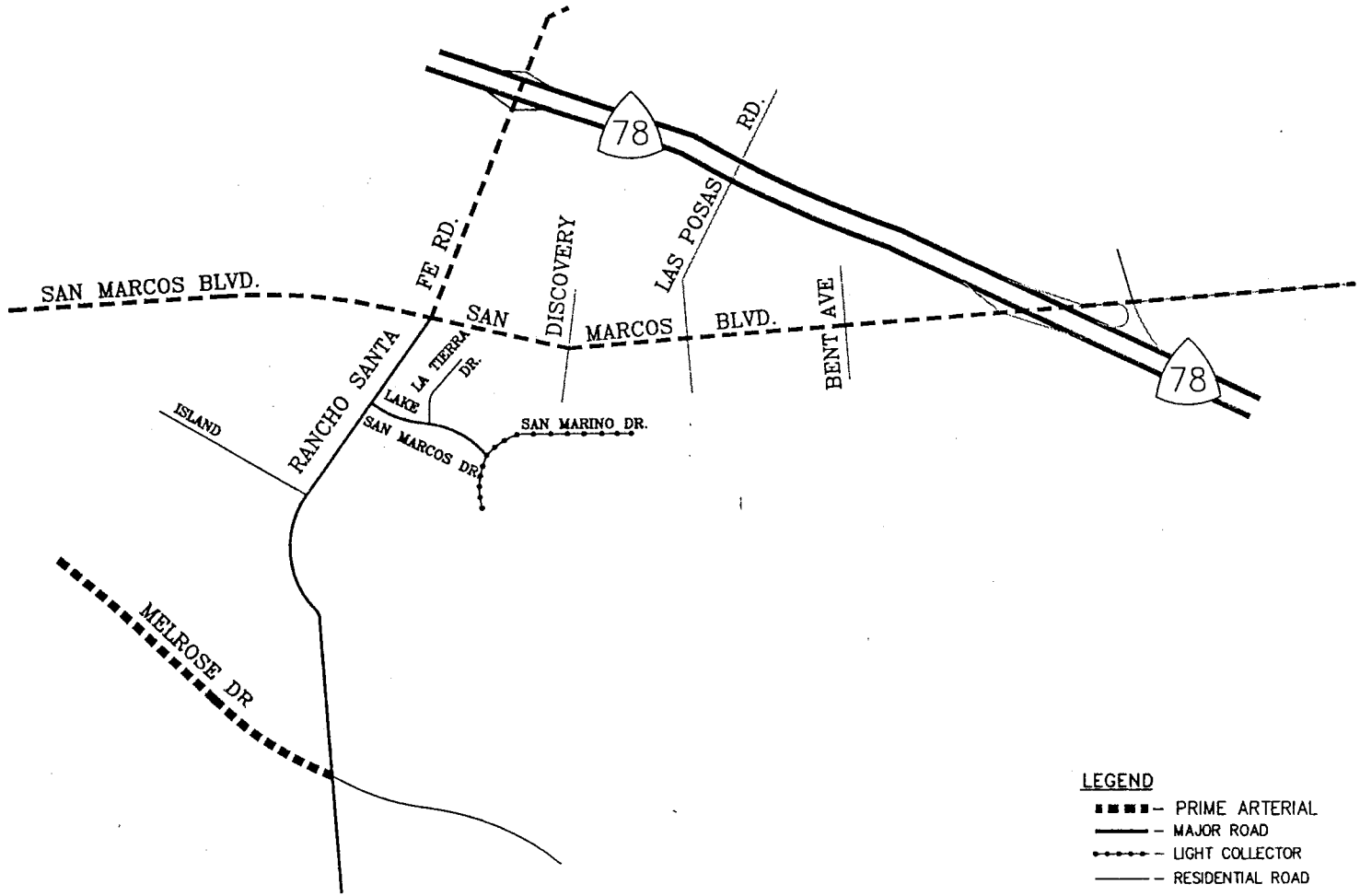

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FIGURE 10

2030 CONDITIONS

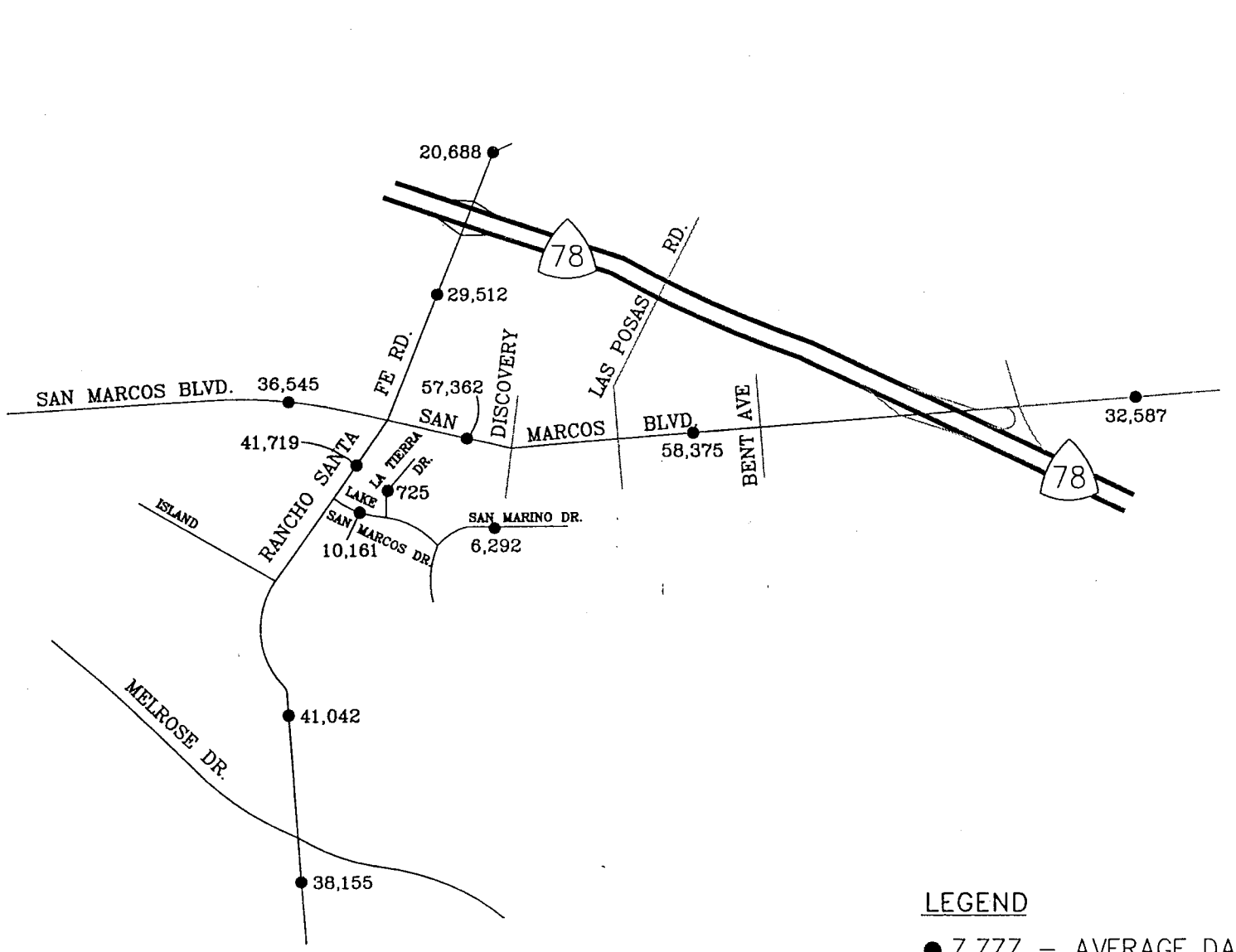

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FIGURE 11

2030 WITHOUT PROJECT TRAFFIC VOLUMES

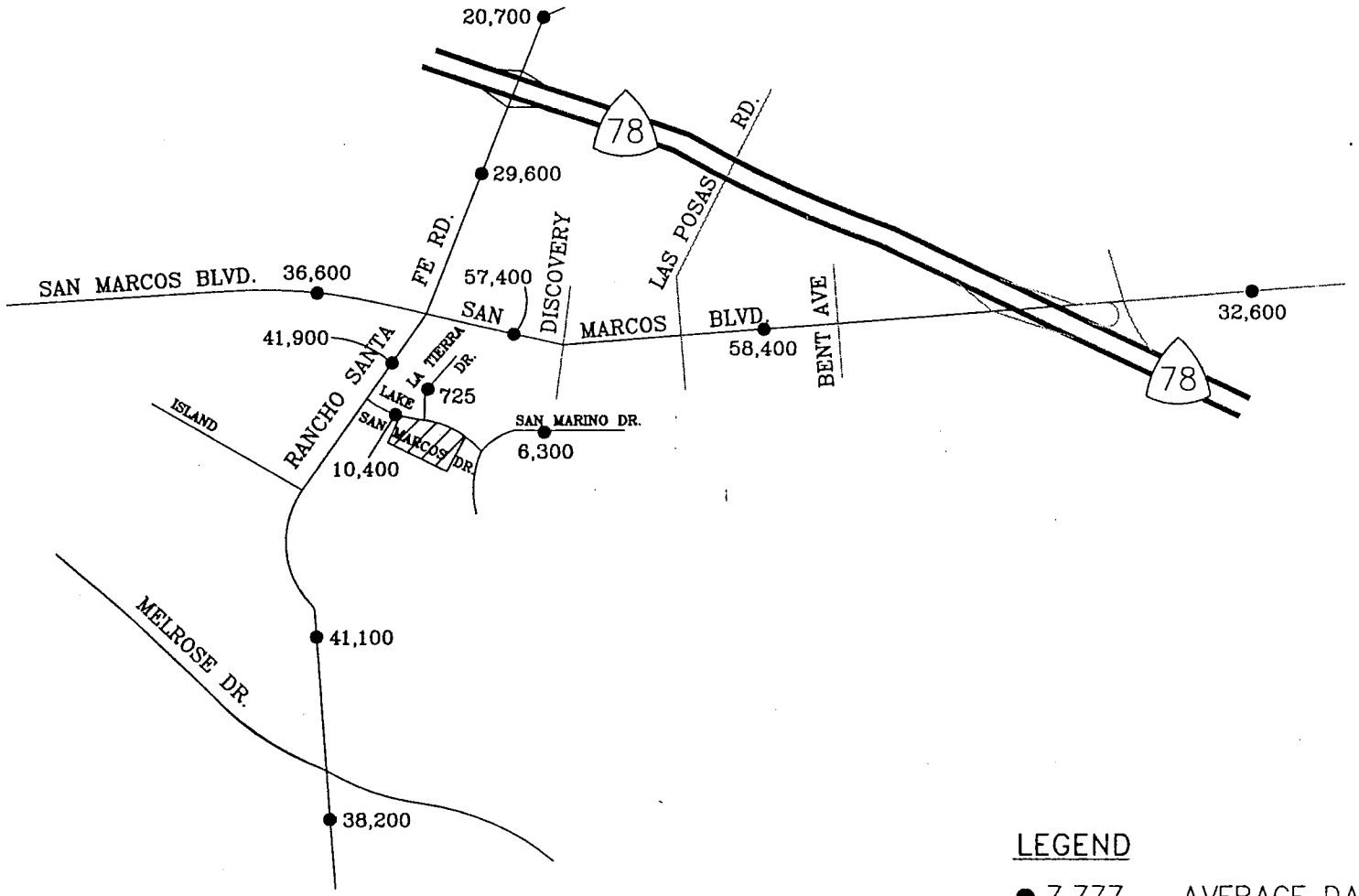

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FIGURE 12

2030 WITH PROJECT TRAFFIC VOLUMES

Table 12 - 2030 Roadway Segment Level of Service Summary

Segment	Class	Capacity at LOS E	2030 without Project			2030 With Project Conditions					
			ADT	V/C	LOS	Project Traffic	ADT	V/C	LOS	Δ V/C	Sig?
Rancho Santa Fe Road[(a)]											
SR-78 to San Marcos Blvd.	6PA	60,000	29,512	0.492	A	88	29,600	0.493	A	0.001	N/A
San Marcos To Lake San Marcos	4MA	40,000	**41,719**	**1.043**	**F**	**181**	**41,900**	**1.048**	**F**	**0.005**	**NO**
Lake San Marcos to Melrose	4MA	40,000	**41,042**	**1.026**	**F**	**58**	**41,100**	**1.028**	**F**	**0.002**	**NO**
San Marcos Boulevard[(a)]											
w/o Rancho Santa Fe	6PA	60,000	36,545	0.609	B	55	36,600	0.610	B	0.001	N/A
Rancho Santa Fe to Las Posas.	6PA	60,000	**57,362**	**0.956**	**E**	**38**	**57,400**	**0.957**	**E**	**0.001**	**NO**
Las Posas Rd. to Bent	6PA	60,000	**58,375**	**0.973**	**E**	**25**	**58,400**	**0.973**	**E**	**0.000**	**NO**
Lake San Marcos Drive[(b)]											
Rancho Santa Fe to La Tierra	4MA	37,000	10,161	0.275	A	239	10,400	0.281	A	0.006	N/A
La Tierra to San Marino	4MA	37,000	10,387	0.281	A	13	10,400	0.281	A	0.000	N/A
San Marino Drive[(b)]											
ne/o Lake San Marcos	LC	16,200	6,292	0.388	C	8	6,300	0.389	C	0.001	N/A
La Tierra Drive[(b)]											
n/o Lake San Marcos	RS[(c)]	1,500 at LOS C	725	N/A	< C	0	725	N/A	< C	N/A	N/A

(a) Segment is Located in the City of San Marcos;

(b) Segment is Located in the County of San Diego

(c) Levels of Service are not typically applied to residential streets as their primary purpose is to serve abutting lots, not carry through traffic. The capacity shown here is the recommended capacity for LOS C. (< C = Less than LOS C)

LOS = Level of Service of the critical movement; V/C= Volume to Capacity Ratio; Δ V/C = Increase (Decrease) in volume-to-capacity ratio due to the addition of the project; N/A = Not Applicable;

6PA = 6-Lane Prime Arterial; 4MA= 4-Lane Major Arterial; LC= Light Collector; RS = Residential Street; w/o = West of; n/o= North of; ne/o= North East of

Sig? = Significance based on the SANTEC/ITE Guidelines for the segments in the City of San Marcos the County's Draft Guidelines for Determining Significance for the segments located in the County of San Diego

SECTION V - PROJECT ACCESS/CIRCULATION

The project proposes to provide one (1) access point off of Lake San Marcos Drive. The access point, Driveway "D" is located across from La Tierra Drive and will provide full-unrestricted access. Driveway "D" will provide one lane of ingress and one-lane of egress and will be stop-controlled on the access approach. To enhance traffic flow along Lake San Marcos Boulevard, the applicant proposes to modify the existing median on Lake San Marcos Boulevard to add a westbound left turn lane at La Tierra Drive. Figure 13 shows the median modifications. As was shown in Figure 9, with the addition of the project it is estimated that there will be a demand of 2 peak hour trips making the westbound turn at La Tierra Drive. With the proposed average vehicle requiring 25 feet (25') to 29 feet (29') of storage, the estimated queue length for the westbound left turn lane is expected to be 50-58 feet. Therefore, the proposed 80 foot westbound left turn pocket will adequately accommodate the projected demand. The Lake San Marcos Boulevard/La Tierra Drive/Driveway "D" access point was analyzed in Section IV and found to operate at LOS B or better under near term cumulative with project conditions (see Tables 10 and 11).

The residents of the community have requested that all-way stop-control be installed at the Lake San Marcos Boulevard/San Marino Drive intersection. Presently and under near term cumulative conditions, the critical movements at the intersection operate at LOS B in the AM and PM peak periods with the existing one-way stop-control (see Tables 10 and 11).

To determine if all-way stop-control is warranted, D&A prepared all-way stop-control warrant analysis utilizing the criteria outlined in the Manual of Uniform Traffic Control Devices (MUTCD). Evaluation of the minimum volume required to warrant all-way stop-control found that all-way stop-control warrants are not warranted under existing or near term cumulative conditions. (A copy of the all-way stop-control warrant worksheets are provided in Appendix G.) Discussion with County staff found that consideration of all-way stop-control was previously considered by the County's Traffic Advisory Committee (TAC) in February 2001 and was not approved at that time. A copy of the TAC report is provided in Appendix G.

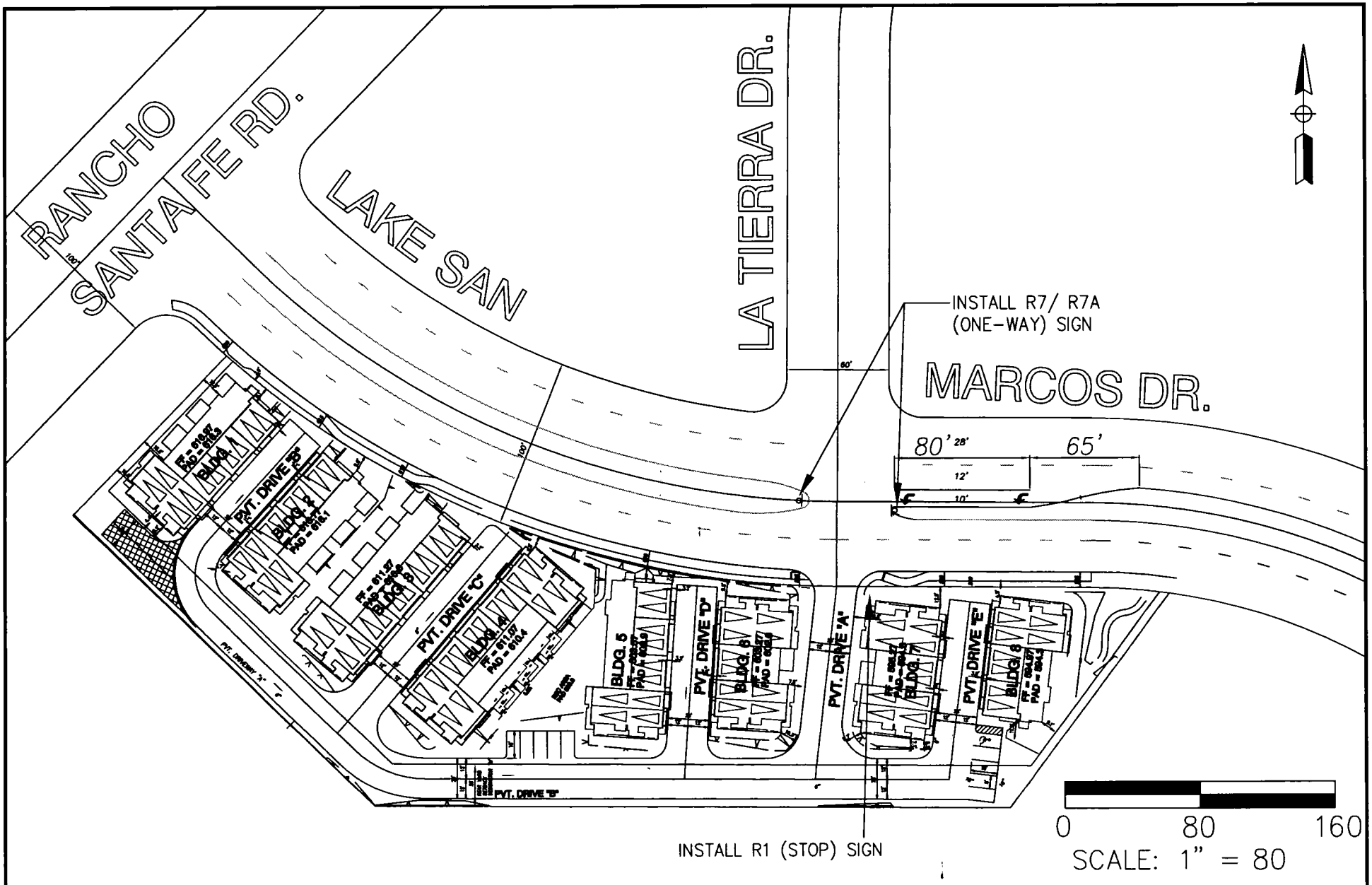

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FIGURE 13

CHANNELIZATION CONCEPT LAKE SAN MARCOS DR./LA TIERRA DR.

SECTION VI - PROJECT MITIGATION

MITIGATION

The proposed project does not significantly impact any roadway segment or intersection analyzed; therefore, mitigation by the proposed project is not required. However, as part of the of the development of the proposed project, the developer proposes to modify the median on Lake San Marcos Drive at La Tierra Drive to provide a westbound left turn lane. See Figure 13 for the modified median design on Lake San Marcos Drive at La Tierra Drive.

It should be noted that the project will add traffic to County Roadway segments that were not analyzed in this report, but are known to operate below LOS D. Therefore, the project will be part of a cumulative impact to the County roadway segments.

COUNTY OF SAN DIEGO TRANSPORTATION IMPACT FEE (TIF)

The County of San Diego has developed an overall programmatic solution that addresses existing and projected future road deficiencies in the unincorporated portion of San Diego County. This program includes the adoption of a Transportation Impact Fee (TIF) program to fund improvements to roadways necessary to mitigate potential cumulative impacts caused by traffic from future development. Based on SANDAG regional growth and land use forecasts, the SANDAG Regional Transportation Model was utilized to analyze projected build-out (year 2030) development conditions on the existing circulation element roadway network throughout the unincorporated area of the County. Based on the results of the traffic modeling, funding necessary to construct transportation facilities that will mitigate cumulative impacts from new development was identified. Existing roadway deficiencies will be corrected through improvement projects funded by other public funding sources, such as TransNet, gas tax, and grants. Potential cumulative impacts to the region's freeways have been addressed in SANDAG's Regional Transportation Plan (RTP). This plan, which considers freeway build out over the next 30 years, will use funds from TransNet, state and federal funding to improve freeways to projected level of service objectives in the RTP.

The proposed project generates 252 ADT. These trips will be distributed on circulation element roadways in the County that were analyzed by the TIF program, some of which currently or are projected to operate at inadequate levels of service. These project trips therefore contribute to a potential significant cumulative impact and mitigation is required. The potential growth represented by this project was included in the growth projections upon which the TIF program is based. Therefore, payment of the TIF, which will be required at issuance of building permits, in combination with other components of the program described above, will mitigate potential cumulative traffic impacts to less than significant.

As seen below in Table 13, based on the fees for the North County Metro area (last updated March 7, 2006) the TIF for the proposed project will be $188,370. It should be noted that the actual fee is subject to change as the TIF Ordinance is updated annually and the fees are adjusted to reflect the engineering cost index. The developer has agreed to pay the TIF to mitigate the project's potential cumulative impacts to the County roadway segments.

Table 13 – Transportation Impact Fee (TIF) Summary

Land Use	Number of Units	Cost per Unit[(a)]	Total Cost
Multi-Family Condominiums	42	$4,485	$188,370

[(a)] Fees as of March 7, 2006
Total Cost = Cost per Unit × Number of Units.
Note: The actual fee is subject to change as the TIF Ordinance is updated annually and the fees are adjusted to reflect the engineering cost index

SECTION VII - SUMMARY OF FINDINGS AND CONCLUSIONS

- The applicant proposes to construct 42 multi-family condominium units at the southeast corner of Rancho Santa Fe Road and Lake San Marcos Drive in the San Marcos area of San Diego County.

- The proposed project is estimated to generate 252 average daily trips, 20 morning peak hour trips, and 23 afternoon peak hour trips.

- The proposed project does not significantly impact any of the key roadway segments or intersections analyzed.

- Although the segments were not analyzed in this report it is known that the proposed project will add one (1) ADT to County roadway segments that currently or are projected to operate at an unacceptable LOS. Therefore, the project is considered to be part of the cumulative impacts to these County roadway segments.

- As mitigation for its cumulative impacts to the County roadway segments, the project proposes to pay the County TIF fee in the amount of $188,370 based on the current fee for the North County Metro area of $4,485 per multi-family dwelling unit (last updated March 7, 2006). It should be noted that the actual fee is subject to change as the TIF Ordinance is updated annually and the fees are adjusted to reflect the engineering cost index.

- As part of the of the development of the proposed project, the developer proposes to modify the median on Lake San Marcos Drive at La Tierra Drive to provide a westbound left turn lane.

- The Lake San Marcos Boulevard/La Tierra Drive/Driveway “D” access point was found to operate at LOS B or better under near term cumulative with project conditions.

APPENDIX A

- 24-Hour Segment Counts
- AM/PM Peak Hour Turn Counts
- Summary of County of San Diego Public Road Standards
- City of San Marcos Level of Service Standards
- City of San Marcos Urban Street Design Criteria
- Excerpts from the County of San Diego's Public Facilities Element
- Excerpts from the SANTEC/ITE Guidelines
- Excerpts from the County's Guidelines for Determining Significance
- County TIF - North County Metro Fee Schedule

24-Hour Segment Counts

Location: Rancho Santa Fe Rd Btwn SR-78 & San Marcos Blvd

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	35		25					12:00	202		244				
00:15	30		30					12:15	260		205				
00:30	32		20					12:30	248		220				
00:45	28	125	16	91			216	12:45	251	961	203	872			1833
01:00	26		14					13:00	223		203				
01:15	26		8					13:15	228		229				
01:30	8		11					13:30	218		232				
01:45	11	71	10	43			114	13:45	245	914	224	888			1802
02:00	11		9					14:00	247		240				
02:15	9		15					14:15	261		249				
02:30	4		5					14:30	268		206				
02:45	6	30	7	36			66	14:45	294	1070	239	934			2004
03:00	9		7					15:00	254		222				
03:15	16		4					15:15	295		218				
03:30	3		12					15:30	329		220				
03:45	9	37	8	31			68	15:45	329	1207	235	895			2102
04:00	5		6					16:00	483		325				
04:15	4		8					16:15	486		362				
04:30	13		18					16:30	459		312				
04:45	16	38	24	56			94	16:45	459	1887	286	1285			3172
05:00	18		43					17:00	390		274				
05:15	18		47					17:15	395		294				
05:30	34		64					17:30	440		319				
05:45	31	101	68	222			323	17:45	402	1627	306	1193			2820
06:00	65		163					18:00	261		203				
06:15	78		226					18:15	247		204				
06:30	78		202					18:30	262		194				
06:45	92	313	257	848			1161	18:45	224	994	201	802			1796
07:00	126		301					19:00	207		165				
07:15	150		298					19:15	175		151				
07:30	185		259					19:30	140		160				
07:45	173	634	262	1120			1754	19:45	140	662	170	646			1308
08:00	217		249					20:00	167		136				
08:15	175		267					20:15	154		124				
08:30	224		250					20:30	116		127				
08:45	211	827	281	1047			1874	20:45	109	546	117	504			1050
09:00	228		269					21:00	138		131				
09:15	258		234					21:15	108		120				
09:30	201		227					21:30	112		104				
09:45	207	894	230	960			1854	21:45	108	466	103	458			924
10:00	180		202					22:00	82		98				
10:15	228		215					22:15	76		83				
10:30	176		207					22:30	72		85				
10:45	205	789	203	827			1616	22:45	90	320	48	314			634
11:00	203		197					23:00	67		49				
11:15	212		211					23:15	54		41				
11:30	221		186					23:30	45		36				
11:45	209	845	175	769			1614	23:45	25	191	28	154			345
Total Vol.		4704		6050			**10754**			10845		8945			**19790**

Daily Totals				
NB	SB	EB	WB	Combined
15549	14995			**30544**

	AM			PM		
Split %	43.7%	56.3%	**35.2%**	54.8%	45.2%	**64.8%**
Peak Hour	08:30	07:00	**08:30**	16:00	16:00	**16:00**
Volume	921	1120	**1955**	1887	1285	**3172**
P.H.F.	0.89	0.93	**0.98**	0.97	0.89	**0.94**

Volumes for: Tuesday, September 21, 2004 City: San Diego Project #: 04-4301-002

Location: Rancho Santa Fe Rd Btwn San Marcos Blvd & Lake San Marcos Dr

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	41		39					12:00	220		256				
00:15	19		25					12:15	252		275				
00:30	17		59					12:30	273		280				
00:45	14	91	11	134			225	12:45	274	1019	286	1097			2116
01:00	13		61					13:00	246		254				
01:15	9		8					13:15	278		245				
01:30	14		18					13:30	239		270				
01:45	14	50	7	94			144	13:45	245	1008	270	1039			2047
02:00	6		5					14:00	272		252				
02:15	8		3					14:15	270		258				
02:30	4		7					14:30	291		293				
02:45	8	26	8	23			49	14:45	238	1071	308	1111			2182
03:00	5		14					15:00	261		282				
03:15	10		3					15:15	235		294				
03:30	5		14					15:30	267		297				
03:45	9	29	4	35			64	15:45	256	1019	266	1139			2158
04:00	7		4					16:00	338		286				
04:15	13		8					16:15	290		262				
04:30	20		14					16:30	266		310				
04:45	30	70	15	41			111	16:45	299	1193	275	1133			2326
05:00	49		24					17:00	313		248				
05:15	57		30					17:15	324		257				
05:30	69		37					17:30	339		265				
05:45	130	305	54	145			450	17:45	335	1311	270	1040			2351
06:00	238		75					18:00	269		243				
06:15	246		93					18:15	255		208				
06:30	274		112					18:30	277		206				
06:45	352	1110	128	408			1518	18:45	236	1037	217	874			1911
07:00	298		254					19:00	218		246				
07:15	314		232					19:15	216		193				
07:30	271		248					19:30	208		193				
07:45	302	1185	286	1020			2205	19:45	184	826	169	801			1627
08:00	250		317					20:00	194		149				
08:15	262		274					20:15	136		141				
08:30	260		306					20:30	135		116				
08:45	281	1053	406	1303			2356	20:45	150	615	112	518			1133
09:00	236		343					21:00	129		104				
09:15	269		300					21:15	159		101				
09:30	225		278					21:30	156		97				
09:45	226	956	258	1179			2135	21:45	116	560	94	396			956
10:00	224		231					22:00	131		66				
10:15	204		217					22:15	95		69				
10:30	235		248					22:30	69		73				
10:45	220	883	211	907			1790	22:45	55	350	70	278			628
11:00	215		221					23:00	41		71				
11:15	207		230					23:15	42		44				
11:30	217		215					23:30	44		46				
11:45	208	847	208	874			1721	23:45	34	161	22	183			344
Total Vol.		6605		6163			**12768**			10170		9609			**19779**

Daily Totals

NB	SB	EB	WB	Combined
16775	15772			**32547**

	AM			PM		
Split %	51.7%	48.3%	**39.2%**	51.4%	48.6%	**60.8%**
Peak Hour	06:30	08:30	**08:30**	17:00	14:45	**17:00**
Volume	1238	1355	**2401**	1311	1181	**2351**
P.H.F.	0.88	0.83	**0.87**	0.97	0.96	**0.97**

Volumes for: Tuesday, September 21, 2004 City: San Diego Project #: 04-4301-003

Location: Rancho Santa Fe Rd Btwn Lake San Marcos Dr & Melrose Dr

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	24		27					12:00	199		207				
00:15	31		27					12:15	196		207				
00:30	12		54					12:30	188		221				
00:45	9	76	15	123			199	12:45	190	773	227	862			1635
01:00	9		55					13:00	229		222				
01:15	6		10					13:15	209		185				
01:30	7		8					13:30	218		217				
01:45	7	29	6	79			108	13:45	200	856	215	839			1695
02:00	6		4					14:00	216		221				
02:15	3		1					14:15	226		203				
02:30	2		1					14:30	252		229				
02:45	5	16	7	13			29	14:45	243	937	273	926			1863
03:00	0		11					15:00	226		326				
03:15	5		5					15:15	242		314				
03:30	5		8					15:30	268		323				
03:45	8	18	5	29			47	15:45	262	998	304	1267			2265
04:00	5		1					16:00	318		409				
04:15	3		4					16:15	369		372				
04:30	12		5					16:30	277		381				
04:45	24	44	7	17			61	16:45	294	1258	371	1533			2791
05:00	43		17					17:00	307		369				
05:15	53		22					17:15	307		315				
05:30	63		26					17:30	330		368				
05:45	90	249	30	95			344	17:45	398	1342	368	1420			2762
06:00	171		52					18:00	259		293				
06:15	267		86					18:15	262		276				
06:30	265		89					18:30	292		238				
06:45	341	1044	110	337			1381	18:45	239	1052	252	1059			2111
07:00	348		192					19:00	186		225				
07:15	231		229					19:15	158		191				
07:30	196		239					19:30	177		177				
07:45	255	1030	283	943			1973	19:45	176	697	158	751			1448
08:00	221		326					20:00	140		134				
08:15	266		282					20:15	146		131				
08:30	218		293					20:30	108		115				
08:45	268	973	364	1265			2238	20:45	105	499	97	477			976
09:00	206		273					21:00	135		92				
09:15	225		335					21:15	140		100				
09:30	225		215					21:30	114		88				
09:45	216	872	238	1061			1933	21:45	124	513	79	359			872
10:00	186		210					22:00	106		83				
10:15	211		211					22:15	88		46				
10:30	201		205					22:30	64		83				
10:45	196	794	221	847			1641	22:45	46	304	59	271			575
11:00	188		218					23:00	39		66				
11:15	196		220					23:15	24		52				
11:30	201		217					23:30	36		40				
11:45	197	782	215	870			1652	23:45	36	135	17	175			310
Total Vol.		5927		5679			**11606**			9364		9939			**19303**

	Daily Totals				
	NB	SB	EB	WB	Combined
	15291	15618			**30909**

	AM			PM		
Split %	51.1%	48.9%	**37.5%**	48.5%	51.5%	**62.5%**
Peak Hour	06:15	08:00	**08:00**	17:00	16:00	**16:00**
Volume	1221	1265	**2238**	1342	1533	**2791**
P.H.F.	0.88	0.87	**0.89**	0.97	0.94	**0.94**

Volumes for: Tuesday, September 21, 2004 City: San Diego Project #: 04-4301-004

Location: San Marcos Blvd W/o Rancho Santa Fe Rd

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			52		17			12:00			255		264		
00:15			32		20			12:15			251		210		
00:30			31		13			12:30			281		250		
00:45			26	141	13	63	204	12:45			278	1065	282	1006	2071
01:00			20		17			13:00			227		291		
01:15			14		12			13:15			233		309		
01:30			19		10			13:30			247		279		
01:45			9	62	10	49	111	13:45			250	957	274	1153	2110
02:00			12		10			14:00			268		264		
02:15			4		9			14:15			233		277		
02:30			20		9			14:30			266		248		
02:45			11	47	10	38	85	14:45			262	1029	215	1004	2033
03:00			16		11			15:00			356		285		
03:15			12		3			15:15			348		283		
03:30			13		18			15:30			355		324		
03:45			19	60	9	41	101	15:45			321	1380	273	1165	2545
04:00			8		16			16:00			359		519		
04:15			12		21			16:15			340		524		
04:30			8		24			16:30			358		556		
04:45			24	52	56	117	169	16:45			395	1452	488	2087	3539
05:00			20		118			17:00			379		480		
05:15			26		95			17:15			385		527		
05:30			33		113			17:30			374		573		
05:45			32	111	195	521	632	17:45			356	1494	470	2050	3544
06:00			45		371			18:00			361		283		
06:15			63		236			18:15			390		226		
06:30			74		305			18:30			331		224		
06:45			100	282	381	1293	1575	18:45			323	1405	225	958	2363
07:00			129		475			19:00			247		164		
07:15			183		416			19:15			194		183		
07:30			196		420			19:30			181		190		
07:45			239	747	365	1676	2423	19:45			170	792	168	705	1497
08:00			332		336			20:00			143		155		
08:15			295		286			20:15			127		151		
08:30			307		318			20:30			117		139		
08:45			350	1284	330	1270	2554	20:45			100	487	144	589	1076
09:00			242		310			21:00			88		148		
09:15			182		373			21:15			88		129		
09:30			173		320			21:30			88		133		
09:45			213	810	254	1257	2067	21:45			73	337	144	554	891
10:00			185		255			22:00			59		109		
10:15			184		244			22:15			53		103		
10:30			198		229			22:30			85		60		
10:45			232	799	229	957	1756	22:45			59	256	57	329	585
11:00			206		215			23:00			54		46		
11:15			159		194			23:15			34		30		
11:30			212		184			23:30			59		40		
11:45			220	797	219	812	1609	23:45			34	181	30	146	327
Total Vol.				5192		8094	**13286**					10835		11746	**22581**

	NB	SB	EB	WB	Combined
Daily Totals			16027	19840	**35867**

	AM			PM		
Split %	39.1%	60.9%	**37.0%**	48.0%	52.0%	**63.0%**
Peak Hour	08:00	06:45	**08:00**	16:45	16:00	**16:45**
Volume	1284	1692	**2554**	1533	2087	**3601**
P.H.F.	0.92	0.89	**0.94**	0.97	0.94	**0.95**

Volumes for: Tuesday, September 21, 2004 City: San Diego Project #: 04-4301-003

Location: San Marcos Blvd Btwn Rancho Santa Fe Rd & Las Posas Rd

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			70		31			12:00			243		324		
00:15			64		24			12:15			242		322		
00:30			54		22			12:30			237		332		
00:45			40	228	27	104	332	12:45			241	963	326	1304	2267
01:00			41		18			13:00			275		268		
01:15			21		13			13:15			288		285		
01:30			25		20			13:30			255		289		
01:45			9	96	13	64	160	13:45			272	1090	281	1123	2213
02:00			11		10			14:00			266		299		
02:15			6		14			14:15			256		303		
02:30			22		12			14:30			264		326		
02:45			13	52	12	48	100	14:45			241	1027	349	1277	2304
03:00			20		12			15:00			232		412		
03:15			21		10			15:15			218		383		
03:30			14		20			15:30			241		397		
03:45			13	68	12	54	122	15:45			244	935	378	1570	2505
04:00			14		24			16:00			232		477		
04:15			7		23			16:15			247		471		
04:30			10		32			16:30			226		459		
04:45			25	56	74	153	209	16:45			226	931	486	1893	2824
05:00			29		125			17:00			232		465		
05:15			42		85			17:15			252		461		
05:30			48		162			17:30			258		453		
05:45			54	173	245	617	790	17:45			223	965	448	1827	2792
06:00			87		359			18:00			235		428		
06:15			91		295			18:15			203		465		
06:30			126		373			18:30			218		394		
06:45			144	448	386	1413	1861	18:45			200	856	406	1693	2549
07:00			234		438			19:00			190		311		
07:15			248		409			19:15			181		267		
07:30			291		397			19:30			179		246		
07:45			306	1079	350	1594	2673	19:45			168	718	226	1050	1768
08:00			412		292			20:00			172		212		
08:15			332		256			20:15			139		174		
08:30			396		346			20:30			149		158		
08:45			425	1565	366	1260	2825	20:45			132	592	150	694	1286
09:00			347		298			21:00			159		155		
09:15			243		370			21:15			139		121		
09:30			254		329			21:30			147		100		
09:45			279	1123	295	1292	2415	21:45			115	560	104	480	1040
10:00			228		293			22:00			124		85		
10:15			243		289			22:15			90		90		
10:30			273		254			22:30			60		106		
10:45			235	979	246	1082	2061	22:45			51	325	109	390	715
11:00			272		225			23:00			49		73		
11:15			273		251			23:15			34		68		
11:30			281		270			23:30			43		64		
11:45			270	1096	265	1011	2107	23:45			34	160	39	244	404
Total Vol.				6963		8692	**15655**					9122		13545	**22667**

	Daily Totals			
NB	SB	EB	WB	Combined
		16085	22237	**38322**

	AM			PM		
Split %	44.5%	55.5%	**40.9%**	40.2%	59.8%	**59.1%**
Peak Hour	08:00	06:45	**08:00**	13:00	16:00	**16:45**
Volume	1565	1630	**2825**	1090	1893	**2833**
P.H.F.	0.92	0.93	**0.89**	0.95	0.97	**0.99**

Volumes for: Tuesday, September 21, 2004 City: San Diego Project #: 04-4301-006

Location: San Marcos Blvd Btwn Las Posas Rd & SR-78

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			60		20			12:00			252		276		
00:15			50		28			12:15			275		275		
00:30			67		26			12:30			293		271		
00:45			50	227	17	91	318	12:45			295	1115	266	1088	2203
01:00			61		15			13:00			270		263		
01:15			20		17			13:15			260		297		
01:30			31		13			13:30			286		282		
01:45			11	123	17	62	185	13:45			248	1064	304	1146	2210
02:00			15		14			14:00			274		283		
02:15			7		10			14:15			280		266		
02:30			20		16			14:30			298		264		
02:45			8	50	8	48	98	14:45			299	1151	240	1053	2204
03:00			30		14			15:00			321		278		
03:15			14		12			15:15			310		288		
03:30			16		22			15:30			349		264		
03:45			16	76	11	59	135	15:45			329	1309	269	1099	2408
04:00			7		22			16:00			458		273		
04:15			17		24			16:15			460		252		
04:30			13		32			16:30			428		256		
04:45			19	56	50	128	184	16:45			448	1794	249	1030	2824
05:00			18		105			17:00			451		286		
05:15			40		88			17:15			412		316		
05:30			45		104			17:30			441		309		
05:45			47	150	189	486	636	17:45			427	1731	256	1167	2898
06:00			74		300			18:00			332		275		
06:15			91		273			18:15			156		237		
06:30			104		268			18:30			300		263		
06:45			123	392	294	1135	1527	18:45			322	1110	214	989	2099
07:00			222		392			19:00			289		200		
07:15			256		324			19:15			231		192		
07:30			250		315			19:30			230		220		
07:45			313	1041	285	1316	2357	19:45			189	939	190	802	1741
08:00			308		245			20:00			188		190		
08:15			374		202			20:15			167		180		
08:30			335		293			20:30			154		141		
08:45			347	1364	310	1050	2414	20:45			132	641	141	652	1293
09:00			272		304			21:00			147		160		
09:15			268		316			21:15			146		131		
09:30			242		274			21:30			117		126		
09:45			246	1028	258	1152	2180	21:45			124	534	134	551	1085
10:00			228		287			22:00			104		124		
10:15			235		267			22:15			83		105		
10:30			245		247			22:30			103		74		
10:45			273	981	240	1041	2022	22:45			110	400	68	371	771
11:00			124		157			23:00			99		63		
11:15			241		253			23:15			50		45		
11:30			253		245			23:30			85		39		
11:45			267	885	237	892	1777	23:45			48	282	41	188	470
Total Vol.				6373		7460	**13833**					12070		10136	**22206**

Daily Totals

NB	SB	EB	WB	Combined
		18443	17596	**36039**

Split %	**AM**			**PM**		
	46.1%	53.9%	**38.4%**	54.4%	45.6%	**61.6%**
Peak Hour	08:00	06:45	**08:30**	16:00	17:00	**16:45**
Volume	1364	1325	**2445**	1794	1167	**2912**
P.H.F.	0.91	0.85	**0.93**	0.98	0.92	**0.97**

Volumes for: Monday, September 20, 2004 City: San Diego Project #: 04-4501-007

Location: Lake San Marcos Dr Btwn Rancho Santa Fe Rd & San Marino Dr

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			3		2			12:00			42		45		
00:15			0		4			12:15			39		45		
00:30			0		0			12:30			42		40		
00:45			1	4	1	7	11	12:45			45	168	47	177	345
01:00			0		1			13:00			47		50		
01:15			3		1			13:15			49		58		
01:30			1		0			13:30			54		80		
01:45			0	4	1	3	7	13:45			38	188	62	250	438
02:00			4		0			14:00			40		56		
02:15			0		0			14:15			42		47		
02:30			1		0			14:30			50		49		
02:45			2	7	1	1	8	14:45			46	178	67	219	397
03:00			0		1			15:00			56		58		
03:15			0		1			15:15			57		59		
03:30			3		0			15:30			55		49		
03:45			1	4	1	3	7	15:45			49	217	56	222	439
04:00			1		0			16:00			65		57		
04:15			1		1			16:15			63		78		
04:30			2		5			16:30			55		52		
04:45			0	4	4	10	14	16:45			65	248	73	260	508
05:00			1		6			17:00			49		74		
05:15			1		2			17:15			69		95		
05:30			2		13			17:30			74		60		
05:45			6	10	13	34	44	17:45			43	235	62	291	526
06:00			7		18			18:00			46		27		
06:15			8		24			18:15			35		35		
06:30			13		25			18:30			33		20		
06:45			20	48	33	100	148	18:45			38	152	30	112	264
07:00			29		55			19:00			23		33		
07:15			28		48			19:15			30		32		
07:30			32		45			19:30			29		23		
07:45			41	130	46	194	324	19:45			22	104	20	108	212
08:00			62		64			20:00			20		24		
08:15			56		75			20:15			13		14		
08:30			60		61			20:30			7		5		
08:45			54	232	88	288	520	20:45			15	55	10	53	108
09:00			40		51			21:00			7		12		
09:15			51		60			21:15			19		7		
09:30			41		42			21:30			12		12		
09:45			38	170	38	191	361	21:45			11	49	10	41	90
10:00			55		54			22:00			4		5		
10:15			39		50			22:15			13		4		
10:30			37		51			22:30			3		5		
10:45			40	171	50	205	376	22:45			9	29	4	18	47
11:00			41		56			23:00			7		4		
11:15			45		47			23:15			5		4		
11:30			50		52			23:30			3		3		
11:45			51	187	48	203	390	23:45			4	19	0	11	30
Total Vol.				971		1239	**2210**					1642		1762	**3404**

	Daily Totals				
	NB	SB	EB	WB	Combined
			2613	3001	**5614**

	AM			PM		
Split %	43.9%	56.1%	**39.4%**	48.2%	51.8%	**60.6%**
Peak Hour	08:00	08:00	**08:00**	16:45	16:45	**16:45**
Volume	232	288	**520**	257	302	**559**
P.H.F.	0.94	0.82	**0.92**	0.87	0.79	**0.85**

Volumes for: Monday, September 20, 2004 City: San Diego Project #: 04-4301-008

Location: San Marino Dr E/o Lake San Marcos Dr

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			2		4			12:00			50		46		
00:15			1		0			12:15			45		45		
00:30			0		2			12:30			47		42		
00:45			1	4	3	9	13	12:45			41	183	42	175	358
01:00			2		0			13:00			28		59		
01:15			0		1			13:15			30		53		
01:30			3		2			13:30			40		38		
01:45			1	6	0	3	9	13:45			43	141	40	190	331
02:00			0		0			14:00			42		39		
02:15			2		0			14:15			44		46		
02:30			0		2			14:30			45		54		
02:45			0	2	0	2	4	14:45			43	174	50	189	363
03:00			0		1			15:00			53		52		
03:15			0		1			15:15			44		45		
03:30			1		0			15:30			59		44		
03:45			1	2	1	3	5	15:45			65	221	44	185	406
04:00			0		1			16:00			56		40		
04:15			2		3			16:15			52		38		
04:30			0		5			16:30			48		38		
04:45			1	3	2	11	14	16:45			59	215	32	148	363
05:00			2		2			17:00			79		41		
05:15			3		9			17:15			51		33		
05:30			4		13			17:30			44		32		
05:45			4	13	21	45	58	17:45			40	214	25	131	345
06:00			8		31			18:00			46		19		
06:15			14		26			18:15			34		26		
06:30			17		47			18:30			35		30		
06:45			19	58	66	170	228	18:45			24	139	38	113	252
07:00			18		58			19:00			21		33		
07:15			24		58			19:15			23		25		
07:30			55		56			19:30			18		25		
07:45			64	161	59	231	392	19:45			14	76	31	114	190
08:00			40		59			20:00			7		15		
08:15			46		59			20:15			12		14		
08:30			34		74			20:30			10		16		
08:45			37	157	63	255	412	20:45			8	37	13	58	95
09:00			34		45			21:00			13		13		
09:15			34		46			21:15			7		11		
09:30			26		36			21:30			9		13		
09:45			29	123	47	174	297	21:45			7	36	3	40	76
10:00			30		50			22:00			8		4		
10:15			31		51			22:15			2		4		
10:30			40		40			22:30			2		7		
10:45			35	136	51	192	328	22:45			2	14	6	21	35
11:00			46		47			23:00			2		2		
11:15			42		60			23:15			2		2		
11:30			47		57			23:30			0		0		
11:45			55	190	55	219	409	23:45			1	5	3	7	12
Total Vol.				855		1314	**2169**					1455		1371	**2826**

Daily Totals

NB	SB	EB	WB	Combined
		2310	2685	**4995**

	AM			PM		
Split %	39.4%	60.6%	**43.4%**	51.5%	48.5%	**56.6%**
Peak Hour	07:30	08:00	**07:30**	16:15	14:15	**15:00**
Volume	205	255	**438**	238	202	**406**
P.H.F.	0.80	0.86	**0.89**	0.75	0.94	**0.93**

Location: La Tierra Dr N/o Lake San Marcos Dr

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		1					12:00	5		4				
00:15	2		1					12:15	4		4				
00:30	0		0					12:30	2		2				
00:45	0	2	0	2			4	12:45	2	13	1	11			24
01:00	1		0					13:00	1		3				
01:15	1		0					13:15	0		2				
01:30	1		2					13:30	8		5				
01:45	0	3	0	2			5	13:45	4	13	7	17			30
02:00	0		0					14:00	9		6				
02:15	0		0					14:15	2		11				
02:30	0		0					14:30	9		2				
02:45	0	0	0	0				14:45	8	28	5	24			52
03:00	0		0					15:00	7		11				
03:15	0		0					15:15	6		10				
03:30	0		1					15:30	12		6				
03:45	0	0	1	2			2	15:45	9	34	1	28			62
04:00	0		0					16:00	6		4				
04:15	0		0					16:15	6		2				
04:30	0		1					16:30	6		4				
04:45	1	1	0	1			2	16:45	4	22	3	13			35
05:00	0		0					17:00	11		2				
05:15	1		1					17:15	4		3				
05:30	1		1					17:30	5		4				
05:45	0	2	1	3			5	17:45	6	26	2	11			37
06:00	0		2					18:00	11		1				
06:15	1		2					18:15	4		5				
06:30	0		6					18:30	4		1				
06:45	0	1	5	15			16	18:45	8	27	1	8			35
07:00	2		3					19:00	3		2				
07:15	4		6					19:15	4		3				
07:30	1		6					19:30	3		3				
07:45	1	8	4	19			27	19:45	4	14	1	9			23
08:00	1		6					20:00	5		2				
08:15	1		6					20:15	6		2				
08:30	3		10					20:30	3		4				
08:45	8	13	19	41			54	20:45	3	17	2	10			27
09:00	9		5					21:00	4		1				
09:15	4		6					21:15	1		4				
09:30	6		9					21:30	3		2				
09:45	3	22	7	27			49	21:45	0	8	1	8			16
10:00	5		9					22:00	3		0				
10:15	6		4					22:15	3		1				
10:30	2		2					22:30	0		0				
10:45	3	16	2	17			33	22:45	2	8	2	3			11
11:00	4		1					23:00	1		0				
11:15	2		3					23:15	0		1				
11:30	4		2					23:30	1		1				
11:45	1	11	4	10			21	23:45	1	3	1	3			6
Total Vol.		79		139			**218**			213		145			**358**

	Daily Totals				
	NB	SB	EB	WB	Combined
	292	284			**576**

	AM			PM		
Split %	36.2%	63.8%	**37.8%**	59.5%	40.5%	**62.2%**
Peak Hour	08:45	08:00	**08:45**	15:00	14:45	**14:45**
Volume	27	41	**66**	34	32	**65**
P.H.F.	0.75	0.54	**0.61**	0.77	0.73	**0.90**

AM/PM Peak Hour Turn Counts

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Rancho Santa Fe Rd DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: SR-78 WB Ramps DAY: TUESDAY PROJECT# 04-4300-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	68	119			119	70				229	0	40	645
7:15 AM	63	128			128	88				253	0	56	716
7:30 AM	90	157			141	71				175	1	47	682
7:45 AM	118	185			150	83				183	0	55	774
8:00 AM	99	170			98	81				211	0	65	724
8:15 AM	116	179			87	54				221	0	72	729
8:30 AM	110	161			99	60				187	0	48	665
8:45 AM	104	167			144	79				156	0	43	693
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 768	NT 1266	NR 0	SL 0	ST 966	SR 586	EL 0	ET 0	ER 0	WL 1615	WT 1	WR 426	TOTAL 5628

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	423	691	0	0	476	289	0	0	0	790	1	239	2909
PEAK HR. FACTOR:		0.919			0.821			0.000			0.879		0.940

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Rancho Santa Fe Rd DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: SR-78 WB Ramps DAY: TUESDAY PROJECT# 04-4300-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	151	170			70	108				121		30	650
4:15 PM	167	162			89	99				112		38	667
4:30 PM	170	168			101	89				99		51	678
4:45 PM	181	180			97	97				108		64	727
5:00 PM	162	160			110	103				119		60	714
5:15 PM	154	171			121	94				113		59	712
5:30 PM	210	182			109	110				110		60	781
5:45 PM	190	158			87	87				91		54	667
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	1385	1351	0	0	784	787	0	0	0	873	0	416	5596

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	707	693	0	0	437	404	0	0	0	450	0	243	2934
PEAK HR. FACTOR:		0.893			0.960			0.000			0.968		0.939

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Rancho Santa Fe Rd DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: SR-78 EB Ramps DAY: TUESDAY PROJECT# 04-4300-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:		2	1	1	2		0.5	0.5	2				
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		142	101	30	324		71		177				845
7:15 AM		161	122	40	340		77		181				921
7:30 AM		183	149	46	365		84		178				1005
7:45 AM		168	117	51	280		69		174				859
8:00 AM		152	95	54	260		49		196				806
8:15 AM		170	128	47	243		53		170				811
8:30 AM		195	121	48	247		43		156				810
8:45 AM		158	132	43	232		52		119				736
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	0	1329	965	359	2291	0	498	0	1351	0	0	0	6793

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	0	654	489	167	1309	0	301	0	710	0	0	0	3630
PEAK HR. FACTOR:		0.861			0.898			0.965			0.000		0.903

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Rancho Santa Fe Rd DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: SR-78 EB Ramps DAY: TUESDAY PROJECT# 04-4300-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:		2	1	1	2		0.5	0.5	2				
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM		241	152	46	152		75	0	110				776
4:15 PM		257	160	48	163		81	0	117				826
4:30 PM		267	169	56	160		87	1	124				864
4:45 PM		278	175	62	175		91	0	141				922
5:00 PM		252	158	48	189		97	0	130				874
5:15 PM		269	168	54	172		109	1	117				890
5:30 PM		252	161	50	163		102	0	98				826
5:45 PM		235	144	43	148		89	0	101				760
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 2051	NR 1287	SL 407	ST 1322	SR 0	EL 731	ET 2	ER 938	WL 0	WT 0	WR 0	TOTAL 6738

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	0	1066	670	220	696	0	384	2	512	0	0	0	3550
PEAK HR. FACTOR:		0.958			0.966			0.968			0.000		0.963

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Rancho Santa Fe Rd DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: San Marcos Blvd DAY: TUESDAY PROJECT# 04-4300-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 2	NR 1	SL 1	ST 2	SR 1	EL 2	ET 2	ER 1	WL 2	WT 3	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	26	110	141	16	156	101	42	157	15	99	216	8	1085
7:15 AM	24	116	145	15	170	119	46	148	7	93	267	4	1154
7:30 AM	40	121	185	22	168	104	102	195	13	106	276	11	1343
7:45 AM	46	122	169	28	183	136	79	186	16	91	220	10	1286
8:00 AM	27	104	126	21	152	71	58	177	15	131	270	9	1161
8:15 AM	37	105	113	12	158	88	64	189	23	117	230	9	1145
8:30 AM	33	93	131	16	137	67	65	196	16	128	253	13	1148
8:45 AM	22	109	124	27	143	80	75	129	14	105	205	13	1046
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 255	NT 880	NR 1134	SL 157	ST 1267	SR 766	EL 531	ET 1377	ER 119	WL 870	WT 1937	WR 75	TOTAL 9368

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	137	463	625	86	673	430	285	706	51	421	1033	34	4944
PEAK HR. FACTOR:		0.885			0.857			0.840			0.907		0.920

CONTROL: signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Rancho Santa Fe Rd DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: San Marcos Blvd DAY: TUESDAY PROJECT# 04-4300-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	1	2	1	2	2	1	2	3	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	38	220	35	38	147	150	188	197	15	110	321	8	1467
4:15 PM	31	218	31	32	139	131	162	147	18	166	306	19	1400
4:30 PM	34	301	36	40	148	164	175	157	24	97	340	17	1533
4:45 PM	20	244	44	16	119	138	193	187	14	153	381	19	1528
5:00 PM	37	253	50	47	150	144	189	184	13	160	274	15	1516
5:15 PM	33	271	32	38	121	155	178	175	23	88	365	14	1493
5:30 PM	34	246	39	22	131	149	155	175	12	79	352	21	1415
5:45 PM	32	200	26	27	94	156	183	137	22	114	327	19	1337
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	259	1953	293	260	1049	1187	1423	1359	141	967	2666	132	11689

PM Peak Hr Begins at: 430 PM

PEAK													
VOLUMES =	124	1069	162	141	538	601	735	703	74	498	1360	65	6070
PEAK HR. FACTOR:		0.913			0.909			0.959			0.869		0.990

CONTROL: signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Rancho Santa Fe Rd DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: Lake San Marcos Dr DAY: TUESDAY PROJECT# 04-4300-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 2	NR 0	SL 1	ST 2	SR 0	EL 0	ET 0	ER 0	WL 1	WT 0	WR 1	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		190	11	17	251					8	31		508
7:15 AM		230	17	26	260					12	52		597
7:30 AM		258	24	38	278					16	70		684
7:45 AM		271	19	31	289					19	60		689
8:00 AM		248	17	41	264					21	42		633
8:15 AM		231	19	37	251					17	41		596
8:30 AM		222	10	31	242					24	36		565
8:45 AM		201	11	24	213					18	29		496
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 1851	NR 128	SL 245	ST 2048	SR 0	EL 0	ET 0	ER 0	WL 135	WT 0	WR 361	TOTAL 4768

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	0	1007	77	136	1091	0	0	0	0	68	0	224	2603
PEAK HR. FACTOR:		0.934			0.959			0.000			0.849		0.944

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Rancho Santa Fe Rd DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: Lake San Marcos Dr DAY: TUESDAY PROJECT# 04-4300-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	0	0	1	0	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM		272	22	21	211					10		14	550
4:15 PM		311	29	29	231					9		17	626
4:30 PM		337	41	40	242					6		24	690
4:45 PM		346	37	32	251					18		19	703
5:00 PM		327	31	30	237					22		26	673
5:15 PM		294	27	34	248					25		14	642
5:30 PM		270	26	28	260					21		11	616
5:45 PM		258	19	20	231					14		7	549
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES =	0	2415	232	234	1911	0	0	0	0	125	0	132	5049

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	0	1304	136	136	978	0	0	0	0	71	0	83	2708
PEAK HR. FACTOR:		0.940			0.984			0.000			0.802		0.963

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Rancho Santa Fe Rd DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: Melrose Dr DAY: TUESDAY PROJECT# 04-4300-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	1	0	1	0	1	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	110	181			211		60		98				660
7:15 AM	107	175			201		58		103				644
7:30 AM	111	189			262		67		101				730
7:45 AM	101	174			272		55		99				701
8:00 AM	106	205			199		70		110				690
8:15 AM	112	237			193		81		101				724
8:30 AM	105	230			227		60		78				700
8:45 AM	106	217			246		44		89				702
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	858	1608	0	0	1811	0	495	0	779	0	0	0	5551

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	430	805	0	0	926	0	273	0	411	0	0	0	2845
PEAK HR. FACTOR:		0.885			0.851			0.940			0.000		0.974

CONTROL: signalized

Prepared by: Southland Car Counters

N-S STREET: Rancho Santa Fe Rd DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: Melrose Dr DAY: TUESDAY PROJECT# 04-4300-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	1	0	1	0	1	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	69	259			201	42	75		97				743
4:15 PM	60	258			202	51	75		100				746
4:30 PM	79	266			180	36	76		101				738
4:45 PM	62	245			166	38	78		107				696
5:00 PM	79	253			207	54	69		111				773
5:15 PM	62	226			212	52	60		141				753
5:30 PM	61	249			210	51	73		129				773
5:45 PM	57	244			190	50	64		102				707
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	529	2000	0	0	1568	374	570	0	888	0	0	0	5929

PM Peak Hr Begins at: 500 PM

PEAK													
VOLUMES =	259	972	0	0	819	207	266	0	483	0	0	0	3006
PEAK HR. FACTOR:		0.927			0.972			0.927			0.000		0.972

CONTROL: signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Las Posas Rd DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: San Marcos Blvd DAY: TUESDAY PROJECT# 04-4300-006

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	1	2	0	1	2	0	1	2	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	8	4	10	11	4	90	39	227	14	10	270	15	702
7:15 AM	4	6	9	18	7	104	51	258	14	14	259	21	765
7:30 AM	11	5	12	22	6	119	60	294	16	12	268	19	844
7:45 AM	14	8	15	15	8	97	62	301	17	17	284	28	866
8:00 AM	9	10	11	8	10	90	71	284	11	22	261	34	821
8:15 AM	10	12	12	11	14	106	57	270	15	15	257	26	805
8:30 AM	11	10	11	12	9	94	34	251	14	10	247	19	722
8:45 AM	8	7	7	9	7	84	31	238	10	11	234	21	667
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 75	NT 62	NR 87	SL 106	ST 65	SR 784	EL 405	ET 2123	ER 111	WL 111	WT 2080	WR 183	TOTAL 6192

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	44	35	50	56	38	412	250	1149	59	66	1070	107	3336
PEAK HR. FACTOR:		0.872			0.861			0.959			0.945		0.963

CONTROL:

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Las Posas Rd | DATE: 9/21/2004 | LOCATION: City of San Marcos

E-W STREET: San Marcos Blvd | DAY: TUESDAY | PROJECT# 04-4300-006

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	1	2	0	1	2	0	1	2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	11	8	7	16	8	58	94	331	8	16	190	14	761
4:15 PM	12	7	9	13	8	67	84	320	7	13	237	12	789
4:30 PM	15	10	8	13	6	62	80	311	10	12	281	12	820
4:45 PM	10	12	11	15	10	72	74	398	12	17	251	16	898
5:00 PM	7	8	14	17	8	64	61	334	14	16	264	15	822
5:15 PM	9	11	12	12	9	58	73	319	12	19	271	11	816
5:30 PM	10	11	9	8	6	60	60	332	10	17	250	12	785
5:45 PM	11	8	7	10	7	47	51	310	8	11	223	9	702
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 85	NT 75	NR 77	SL 104	ST 62	SR 488	EL 577	ET 2655	ER 81	WL 121	WT 1967	WR 101	TOTAL 6393

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	41	41	45	57	33	256	288	1362	48	64	1067	54	3356
PEAK HR. FACTOR:		0.962			0.892			0.877			0.971		0.934

CONTROL:

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-78 EB Ramps DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: San Marcos Blvd DAY: TUESDAY PROJECT# 04-4300-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:				2		1		3	2	2	3		
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				60		110		172	160	37	378		917
7:15 AM				69		98		181	189	36	467		1040
7:30 AM				72		101		172	211	41	509		1106
7:45 AM				63		125		201	241	48	458		1136
8:00 AM				48		97		210	251	52	419		1077
8:15 AM				57		108		171	239	62	401		1038
8:30 AM				61		90		167	222	70	411		1021
8:45 AM				47		102		138	197	67	321		872
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 477	ST 0	SR 831	EL 0	ET 1412	ER 1710	WL 413	WT 3364	WR 0	TOTAL 8207

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	0	0	0	252	0	421	0	764	892	177	1853	0	4359
PEAK HR. FACTOR:		0.000			0.895			0.898			0.923		0.959

CONTROL: Signalized

Prepared by: Southland Car Counters

N-S STREET: SR-78 EB Ramps DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: San Marcos Blvd DAY: TUESDAY PROJECT# 04-4300-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:				2		1		3	2	2	3		
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM				71		106		286	262	69	247		1041
4:15 PM				89		117		302	257	72	371		1208
4:30 PM				110		128		291	270	74	365		1238
4:45 PM				97		138		319	251	81	324		1210
5:00 PM				70		150		301	227	90	288		1126
5:15 PM				68		107		274	219	71	291		1030
5:30 PM				62		87		261	210	62	327		1009
5:45 PM				54		92		244	217	47	302		956
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 621	ST 0	SR 925	EL 0	ET 2278	ER 1913	WL 566	WT 2515	WR 0	TOTAL 8818

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	0	0	0	366	0	533	0	1213	1005	317	1348	0	4782
PEAK HR. FACTOR:		0.000			0.944			0.973			0.940		0.966

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-78 WB Ramps DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: San Marcos Blvd DAY: TUESDAY PROJECT# 04-4300-008

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	1		2	2	3	1		3	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	301	128	17	24		140	112	138	48		215	18	1141
7:15 AM	287	101	14	21		137	101	124	52		197	27	1061
7:30 AM	247	74	10	20		121	101	110	43		184	34	944
7:45 AM	237	90	11	23		109	84	94	40		149	24	861
8:00 AM	219	81	5	17		89	60	70	31		131	17	720
8:15 AM	227	89	7	14		97	71	79	37		129	15	765
8:30 AM	237	97	6	10		91	60	81	42		120	11	755
8:45 AM	218	80	8	12		80	57	70	34		91	14	664
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	1973	740	78	141	0	864	646	766	327	0	1216	160	6911

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	1072	393	52	88	0	507	398	466	183	0	745	103	4007
PEAK HR. FACTOR:		0.850			0.907			0.878			0.910		0.878

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-78 WB Ramps DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: San Marcos Blvd DAY: TUESDAY PROJECT# 04-4300-008

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	1		2	2	3	1		3	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	217	60	17	40		121	94	204	41		160	14	968
4:15 PM	210	67	19	37		122	101	237	47		154	13	1007
4:30 PM	201	68	23	41		119	104	252	52		169	18	1047
4:45 PM	197	79	16	46		117	121	260	62		181	22	1101
5:00 PM	187	70	10	37		142	101	251	51		174	19	1042
5:15 PM	212	71	16	41		119	92	241	57		162	14	1025
5:30 PM	207	68	12	40		99	87	236	42		154	10	955
5:45 PM	187	54	10	30		70	74	201	34		132	11	803
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	1618	537	123	312	0	909	774	1882	386	0	1286	121	7948

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	797	288	65	165	0	497	418	1004	222	0	686	73	4215
PEAK HR. FACTOR:		0.962			0.925			0.928			0.935		0.957

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: La Tierra Dr DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: Lake San Marcos Dr DAY: TUESDAY PROJECT# 04-4300-009

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:				0		1	0	2		0	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				0		7	1	25			37		70
7:15 AM				0		3	0	20			23		46
7:30 AM				0		7	1	36			39		83
7:45 AM				0		2	0	51			59		112
8:00 AM				0		8	0	49			64		121
8:15 AM				1		11	7	58			54		131
8:30 AM				0		18	7	49			64		138
8:45 AM				0		3	6	44			45		98
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 1	ST 0	SR 59	EL 22	ET 332	ER 0	WL 0	WT 385	WR 0	TOTAL 799

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	0	0	0	1	0	39	14	207	0	0	241	0	502
PEAK HR. FACTOR:		0.000			0.556			0.850			0.941		0.909

CONTROL: 1-Way Stop S

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: La Tierra Dr DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: Lake San Marcos Dr DAY: TUESDAY PROJECT# 04-4300-009

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:				0		1	0	2		0	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM				0		3	6	64		0	41	2	116
4:15 PM				1		0	7	49		0	29	0	86
4:30 PM				0		5	11	61		0	40	0	117
4:45 PM				0		1	4	79		1	30	0	115
5:00 PM				0		4	2	41		0	26	0	73
5:15 PM				0		0	8	31		1	34	0	74
5:30 PM				0		2	5	45		1	29	1	83
5:45 PM				0		4	6	35		0	15	0	60
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	1	0	19	49	405	0	3	244	3	724

PM Peak Hr Begins at: 400 PM

PEAK VOLUMES =	0	0	0	1	0	9	28	253	0	1	140	2	434
PEAK HR. FACTOR:		0.000			0.500			0.846			0.831		0.927

CONTROL: 1-Way Stop S

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: San Marino Dr DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: Lake San Marcos Dr DAY: TUESDAY PROJECT# 04-4300-010

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	0	1	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	7	8			34	30	14		7				100
7:15 AM	8	5			28	24	18		8				91
7:30 AM	9	11			32	24	34		6				116
7:45 AM	8	17			22	36	49		10				142
8:00 AM	9	12			25	48	37		11				142
8:15 AM	9	8			12	37	40		14				120
8:30 AM	11	9			22	61	31		15				149
8:45 AM	10	15			11	45	23		17				121
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	71	85	0	0	186	305	246	0	88	0	0	0	981

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	37	46	0	0	81	182	157	0	50	0	0	0	553
PEAK HR. FACTOR:		0.830			0.792			0.877			0.000		0.928

CONTROL: 1-Way Stop EB

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: San Marino Dr DATE: 9/21/2004 LOCATION: City of San Marcos

E-W STREET: Lake San Marcos Dr DAY: TUESDAY PROJECT# 04-4300-010

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	0	1	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	14	21			14	29	48		14				140
4:15 PM	8	9			17	22	49		8				113
4:30 PM	17	11			13	24	52		12				129
4:45 PM	7	21			15	26	34		15				118
5:00 PM	17	17			11	22	39		13				119
5:15 PM	10	11			12	19	31		11				94
5:30 PM	9	9			9	22	30		15				94
5:45 PM	8	17			8	16	29		12				90
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 90	NT 116	NR 0	SL 0	ST 99	SR 180	EL 312	ET 0	ER 100	WL 0	WT 0	WR 0	TOTAL 897

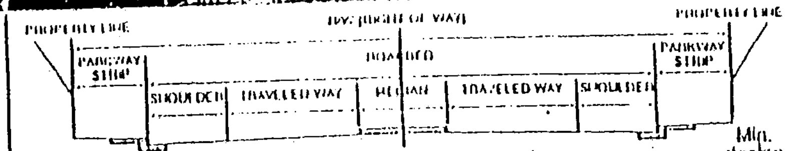
PM Peak Hr Begins at: 400 PM

PEAK VOLUMES =	46	62	0	0	59	101	183	0	49	0	0	0	500
PEAK HR. FACTOR:		0.771			0.930			0.906			0.000		0.893

CONTROL: 1-Way Stop EB

Summary of County of San Diego Public Road Standards

SUMMARY OF COUNTY OF SAN DIEGO PUBLIC ROAD STANDARDS[1]



CLASS	CIRCULATION ELEMENT ROAD CROSS SECTIONS									AVERAGE DAILY VEHICLE TRIPS (ADT) LEVEL OF SERVICE (LOS)				
	Median	Traveled way	Shoulder	Parkway strip	Roadbed	R/W*	Min. curve radius	Max. grades	Min. design speed (mph)	A Free flow	B Steady flow	C Stable flow	D Approach unstable	E Unstable flow
EXPRESSWAY Divided highway with only selected public road access with full grade separations	34'	36'	10'	10'	126'	146'	1200'	6%	55	<38,000	<64,000	<70,000	<86,000	<100,000
PRIME ARTERIAL Divided highway, signalized intersections, access control, or extra lanes as required	14'	36'	8'	10'	102'	122'	1200'	6%	55	<22,200	<37,000	<44,600	<50,000	<57,000
MAJOR ROAD 4 lane divided road, access & parking controlled as necessary	14'	24'	8'	10'	78'	98'	1200'	7%	55	<14,800	<24,700	<29,600	<33,400	<37,000
COLLECTOR 4 lane undivided road	—	24'	8'	10'	64'	84'	700'	7%	[illegible]	<13,700	<22,800	<27,400	<30,800	<34,200
LIGHT COLLECTOR 2 lane undivided road	—	12'	8'	10'	40'	60'	700'	9%	45	<1,900	<4,100	<7,100	<10,900	<16,200
RURAL COLLECTOR 2 lane undivided road, extra R/W allows greater flexibility & upgrade	—	12'	8'	22'	40'	84'	500'	12%	40	<1,900	<4,100	<7,100	<10,900	<16,200
RURAL LIGHT COLLECTOR 2 lane undivided road, decreased "curve radii" standards	—	12'	8'	10'	40'	60'	500'	12%	40	<1,900	<4,100	<7,100	<10,900	<16,200
RURAL MOUNTAIN 2 lane undivided road appropriate only in rural mountain areas	—	12'	8'	30'	40'	100'	500'	12%	40	<1,900	<4,100	<7,100	<10,900	<16,200
RECREATIONAL PARKWAY Recreational routes for travel pleasure purposes	—	12'	8'	30'	40'	100'	400'	12%	25	<1,900	<4,100	<7,100	<10,900	<16,200
NON-CIRCULATION ROADS														
RESIDENTIAL COLLECTOR	—	12'	8'	10'	40'	60'	300'	12%	30	<4,500				
RESIDENTIAL STREET	—	12'	6'	10'	36'	56'	200'	15%	30	<1,500				
RESIDENTIAL LOOP/CUL DE SAC	—	12'	4'	10'	32'	52'	200'	15%	30	<200				

Levels of service are not applied to non-circulation roads since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors. Not all non-circulation road classifications are shown.

* [illegible]

[1] For full standards, refer to Public Road Standards, adopted by the Board of Supervisors on [illegible]

City of San Marcos Level of Service Standards

Table 3.5-1

CITY OF SAN MARCOS STANDARD STREET CLASSIFICATION AVERAGE DAILY VEHICLE TRIPS

Road			Level of Service				
	(V/C)		(0.60)	(0.70)	(0.80)	(0.90)	(1.00)
Class	X-Section		A	B	C	D	E
Prime Arterial	106/126	*NP	36,000	42,000	48,000	54,000	60,000
Major Arterial	82/102	*NP	24,000	28,000	32,000	36,000	40,000
Secondary Arterial	64/84	*NP	18,000	21,000	24,000	27,000	30,000
Collector	40/60	*NP	9,000	10,500	12,000	13,500	15,000
Industrial	64/84		12,000	14,000	16,000	18,000	20,000
	46/66		6,000	7,000	8,000	9,000	10,000
Residential Collector	48/68	**WP	2,500	5,000	8,000	8,500	10,000
Residential Street	40/60		***	***	500	***	***
Interim Road	28/40 or 60		***	***	2,800	***	***

* No Parking
** With Parking
*** Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

314651000

City of San Marcos Urban Street Design Criteria

CITY OF SAN MARCOS
URBAN STREET DESIGN CRITERIA

Design Criteria	Prime Arterial	6-Lane Major Arterial	4-Lane Major Arterial	Secondary Arterial	Collector Street	Industrial Street(s)	Residential Street	Cul-de-Sac Street	Alley Street	Hillside Street
Minimum "Recovery" Tangent	200'	150'	150'	100'	100'	50' or 100'	50'	50'	----	----
Minimum Intersection Tangent *(8)	100'	100'	100'	50'	50'	50'	25'	25'	----	25'
Maximum Grade *(9)	7%	7%	7%	10%	12%	7%	12% (14%RPCC)	12% (14%RPCC)	----	15%
Minimum Grade	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Lighting *(10) Intersectn. Non-Intersection	180W 180W	180W 135W	180W 135W	135W 90W	90W 55W	135W 90W	90W 55W	55W 55W	---- ----	55W 55W
Curb Return Radius *(11)	35'	35'	35'	35'	35'	35'	25'	25'	10'	25'
Stopping Sight Distance	525' to 650'	400' to 475'	400' to 475'	275' to 325'	200'	200'	150'	125'	325'	125'
Driveway Access *(12)	None *(13)	None *(13)	None *(13)	None *(13)	OK *(14)	OK *(14)	OK	OK	OK	OK
Driveway/Intersection Spacing *(15)	300'	300'	200'	200'	100'	100'	50'	----	----	----
Driveway to Driveway Separation	250'	250'	250'	175'	50'	75'	**	**	**	**
On-Street Parking	None	None	None	None	OK *(14)	OK *(14)	OK	None	None	One side Only

*See Corresponding General Notes

RPCC = Reinforced Portland Cement Concrete

Revised 4/23/98

[illegible]

Excerpts from the County of San Diego's Public Facilities Element

Part XII
Public Facility Element

San Diego County General Plan

Adopted
March 13, 1991
GPA 90-FE
Amended
June 10, 1992
GPA92-FE1

This Element was partially funded through the Community Development Block Grant program

ISSUES

1. Increases in the amount of automobile use have resulted in increased congestion on the region's roadways.

Discussion: The dramatic rise in automobile use has far surpassed the ability of the County and other jurisdictions to upgrade and maintain the highway and road system. As the number of vehicles on the roadways has increased, the expansion of existing roadways and the construction of new roadways has not kept pace. Between 1978 and 1988, automobile registrations increased by 64% while increases in local street and road mileage only rose by 16%. As a result, certain roadways are functioning at a Level of Service "E" or "F" on a routine basis.

A LOS "C", which allows for stable traffic flow with room to maneuver, is a generally accepted level to strive for in new development. At this level, traffic generally flows smoothly, although freedom to maneuver within the roadway is somewhat restricted and lane changes require additional care.

However, there are some cases where development cannot achieve a LOS "C" on off-site roadways. For instance, there are areas where the existing development pattern precludes the addition of lanes or other mitigation or when the community is opposed to certain improvements to maintain a LOS "C". Additionally, there are existing roadways in the County that are currently operating below a LOS "C". Such cases are currently exceptions and generally occur when there is insufficient right-of-way to expand or modify a roadway or when the existing development in the area has generated more traffic than anticipated. In these cases a Level of Service "D" is acceptable on off-site roadways. At this level, small increases in flow cause substantial deterioration in service. Freedom to maneuver is limited and minor incidents can cause substantial interruption in the traffic flow.

When the roadway system reaches a LOS "E" or "F", or new development would push it to LOS "E" or "F", new development should not be approved unless the project can mitigate the LOS "E" or contribute a fair share to a program to mitigate the project's impacts, unless a statement of overriding findings can be made.

In order to control the amount of traffic on the roadways, and subsequently the amount of congestion, it is necessary to apply the LOS measurement to all roads that are impacted by a proposed project. The effect of a project on the road system varies from project to project. Due to the size and type of project, the type and capacity of roads serving the project, the amount of traffic generated by the development and the existing development pattern, the impact will vary from one project to another. To apply a LOS standard to only major or larger capacity roads or to within a specified geographic distance of a project could result in an inadequate review of the impacts of a project and create the potential for increased congestion. Therefore, project impacts should be assessed on a case-by-case basis.

GOAL

A SAFE, CONVENIENT, AND ECONOMICAL INTEGRATED TRANSPORTATION SYSTEM INCLUDING A WIDE RANGE OF TRANSPORTATION MODES.

OBJECTIVE 1:

A Level of Service "C" or better on County Circulation Element roads.

Policy 1.1: New development shall provide needed roadway expansion and improvements on-site to meet the demand created by the development, and to maintain a Level of Service "C" on Circulation Element Roads during peak traffic hours. New development shall provide off-site improvements designed to contribute to the overall achievement of a Level of Service "D" on Circulation Element Roads.

Implementation Measure 1.1.1: Review all development proposals to determine both their short-term and long-term impacts on the roadway system. The area of impact will be determined based on the size, type and location of the project; the traffic generated by the project; and the existing circulation and development pattern in the area. [DPW, DPLU]

Implementation Measure 1.1.2: Require, as a condition of approval of discretionary projects, improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below "C" on on-site Circulation Element roads. [DPLU, DPW]

Implementation Measure 1.1.3: Require, as a condition of approval of discretionary projects which have a significant impact on roadways, improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below "D" on off-site and on-site abutting Circulation Element roads. New development that would significantly impact congestion on roads at LOS "E" or "F", either currently or as a result of the project, will be denied unless improvements are scheduled to increase the LOS to "D" or better or appropriate mitigation is provided . Appropriate mitigation would include a fair share contribution in the form of road improvements or a fair share contribution to an established program or project. If impacts cannot be mitigated, the project will be denied unless a specific statement of overriding findings is made pursuant to Section 15091(b) and 15093 of the State CEQA Guidelines. [DPLU, DPW]

Implementation Measure 1.1.4: Whenever possible on development proposals, require that access to parcels adjacent to roads shown on the Circulation Element be limited to side streets in order to maintain through traffic flow. [DPW, DPLU]

Excerpts from the SANTEC/ITE Guidelines

SANTEC / ITE GUIDELINES FOR TRAFFIC IMPACT STUDIES [TIS] IN THE SAN DIEGO REGION

MARCH 2, 2000 FINAL DRAFT

PREFACE

These guidelines are subject to continual update, as future technology and documentation become available. Always check with local jurisdictions for their preferred or applicable procedures.

Committee Compilation by Kent A. Whitson

Reviewed by committee members: Hank Morris (co-chair), Tom Parry (co-chair), Arnold Torma (co-chair), Susan O'Rourke, Bill Darnell, Labib Qasem, John Boarman, Ralph Leyva, and Erik Ruehr

Additional review by: Ann French Gonsalves, Bill Figge, Bob Goralka, and Gary Halbert

10. Channelization and Intersection Geometry - Caltrans' Traffic Manual and Guidelines for Reconstruction of Intersections, City of San Diego's Traffic Impact Study Manual -Appendix 4

Note: Neither local jurisdictions nor Caltrans officially advocate the use of any special software packages, especially since new ones are being developed all the time. However, consistency with the Highway Capacity Manual (HCM) is advocated in most cases. The above-mentioned software packages have been utilized locally. Because it is so important to have consistent end results, always consult with all affected jurisdictions, including Caltrans, regarding the analytical techniques and software being considered (especially if they differ from above) for the TIS.

IX. SIGNIFICANCE OF TRAFFIC IMPACTS TO CONSIDER MITIGATION

The following Table 1 indicates when a project's impact is significant – and mitigation measures are to be identified. That is, if a project's traffic impact causes the values in this table to be exceeded, it is determined to be a significant project impact. (Mitigation for all identified significant impacts should be provided for any project requiring CEQA analysis.)

Note: It is the responsibility of Caltrans, on Caltrans initiated projects, to mitigate the effect of ramp metering, for initial as well as future operational impacts, on local streets that intersect and feed entrance ramps to the freeway. Developers and/or local agencies, however, should be required to mitigate any impact to existing ramp meter facilities, future ramp meter installations, or local streets, when those impacts are attributable to new development and/or local agency roadway improvement projects.

Not all mitigation measures can feasibly be "hard" (new lanes or new capacity) improvements. A sample mitigation measure might include financing toward a regional ITS [Intelligent Transportation System] project, such as improved or "dynamic" ramp metering with real-time delay information available to motorists. The information can be accessed on either home or in-vehicle computers, or even by telephone (each ramp could have its own phone number with delay information) so the motorist can make a driving decision long before she or he arrives at a congested on-ramp. This sample mitigation would allow a project applicant (especially with a relatively small project) to meet mitigation by paying into a regional ramp meter fee, providing the fee can be established in the near future.

Other mitigation measures may include Transportation Demand Management recommendations – transit facilities, bike facilities, walkability, telecommuting, traffic rideshare programs, flex-time, carpool incentives, parking cash-out, etc. Additional mitigation measures may become acceptable as future technologies and policies evolve.

Table 1

MEASURE OF SIGNIFICANT PROJECT TRAFFIC IMPACTS

Level of Service with Project*	Allowable Change due to Project Impact**					
	Freeways		Roadway Segments		Intersections	Ramp*** Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay(min.)
D, E, & F (or ramp meter delays above 15 min.)	0.01	1	0.02	1	2	2

NOTES:

* All level of service measurements are based upon HCM procedures for peak-hour conditions. However, V/C ratios for Roadway Segments may be estimated on an ADT/24-hour traffic volume basis (using Table 2 or a similar LOS chart for each jurisdiction). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped or not densely developed locations per jurisdiction definitions). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

** If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. These impact changes may be measured from appropriate computer programs or expanded manual spreadsheets. The project applicant shall then identify feasible mitigation (within the Traffic Impact Study [TIS] report) that will maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see above * note), or if the project adds a significant amount of peak-hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating significant impact changes.

*** See Attachment B for ramp metering analysis.

KEY: V/C = Volume to Capacity ratio
Speed = Speed measured in miles per hour
Delay = Average stopped delay per vehicle measured in seconds for intersections, or minutes for ramp meters
LOS = Level of Service

Excerpts from the County's Guidelines for Determining Significance

COUNTY OF SAN DIEGO

GUIDELINES FOR DETERMINING SIGNIFICANCE AND REPORT FORMAT AND CONTENT REQUIREMENTS

TRANSPORTATION AND TRAFFIC

LAND USE AND ENVIRONMENT GROUP

Department of Planning and Land Use
Department of Public Works

September 26, 2006

A47

County of San Diego Off-Street Parking Design Manual
[http://www.co.san-diego.ca.us/cnty/cntydepts/landuse/planning/zoning/ospdman.pdf]
The County of San Diego Off-Street Parking Design Manual implements Section 6793(c) of the County Zoning Ordinance. This section of the Ordinance relates to the design, dimensions, construction, landscaping, and surfacing of parking and bicycle spaces, and driveways.

2.3 Regional and Local Traffic Impact Analysis Guidelines

San Diego Traffic Engineers' Council (SANTEC) and the Institute of Traffic Engineers (ITE)
The San Diego Traffic Engineers' Council (SANTEC) and the local chapter of the Institute of Traffic Engineers (ITE) have endorsed for use the "Guidelines of Traffic Impact Studies (TIS) in the San Diego Region." These guidelines were prepared by a traffic subcommittee formed by SANDAG. The purpose of the subcommittee was to develop a model set of guidelines for the analysis of traffic impacts for adoption and use by the various jurisdictions in the San Diego region. The goal was to foster more consistency in the assessment of traffic impacts in the San Diego region. These guidelines establish a LOS target of LOS D. Impacts would be identified for those projects that significantly increase the volume and or delay at intersections and road segments operating below LOS D (i.e. at LOS E of LOS F) either prior to or as a result of the proposed project. These guidelines have been incorporated into an appendix of the Regional Congestion Management Program (CMP) that is formally adopted by SANDAG for use by local jurisdictions. These guidelines are often used as a guideline by many local traffic-engineering consultants in the preparation of traffic impact studies in the San Diego Region. These guidelines, however, do not provide specific direction regarding the assessment of cumulative traffic impacts, unsignalized intersections or consistency with recent changes in the CEQA guidelines that removed consideration of de minimus findings/effects.

California Department of Transportation (Caltrans)
The California Department of Transportation (Caltrans) has prepared a "Guide for the Preparation of Traffic Impact Studies." Objectives for the preparation of this guide include providing consistency and uniformity in the identification of traffic impacts generated by local land use proposals. In terms of level of service, Caltrans endeavors to maintain a goal of LOS C on State highway facilities. However, Caltrans acknowledges that this may not always be feasible. In these circumstances, Caltrans often accepts lower LOS on facilities that are currently operating below the LOS C objective.

City of San Diego
The City of San Diego has prepared a "Traffic Impact Study Manual." The purpose is to provide guidelines to consultants on how to prepare traffic impact studies in the City of San Diego and to ensure consistency on the preparation of these studies. Impacts are identified if the proposed project will increase the traffic volume on a road segment above an identified allowable increase. The better the initial level of service on the road segment, the higher the allowable volume increase.

3.0 TYPICAL ADVERSE EFFECTS

3.1 Traffic Congestion

Typical traffic related impacts are most often associated with traffic congestion on local roads and the regional circulation network. As the San Diego region grows, the number of vehicle trips that are generated by residents also grows. Historically, vehicle trips have been increasing at a faster rate than that of the population growth. It is forecasted that more than 16 million vehicle trips would be made in this region each weekday by the year 2030. The automobile is expected to remain the primary method of travel in the region, but new and widened freeways, increased trolley and bus service, better rail service, and additional highway improvements would alleviate some of the traffic congestion. SANDAG's 2030 RTP details some of the regional improvements that are projected to occur within a twenty-year time frame, but even with these improvements individual projects will continue to contribute to traffic congestion.

Traffic congestion usually affects level of service on roadway segments and at intersections and ramps, which in turn results in decreases in traffic flow on roadways and longer queues at intersections and ramps. These delays ad time to drivers daily commutes and can be noticeable impacts of traffic congestion.

3.2 Connectivity

The County's road network is connected by a variety of roadways, which allow drivers to travel throughout the County. However, at times there are physical limitations, such as steep topography, which partially constrain connectivity on existing roadways and preclude the construction on new roadway connections. In order to address connectivity issues alternative road networks to access potential connections may be required.

3.3 Hazards Due to an Existing Transportation Design Feature

Increased traffic generated or redistributed by a proposed project may cause a significant traffic operational impact to an existing transportation design feature and result in potential hazards. These hazards can occur due to a design features or physical configuration of existing or proposed access roads and can adversely affect the safe transport of vehicles along a roadway. The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers, may also result in vehicle conflicts with other vehicles or stationary objects.

3.4 Hazards to Pedestrians or Bicyclists

Increased traffic generated or redistributed by a proposed project may cause a significant traffic operational impact to pedestrians or bicyclists and result in potential hazards. These hazards can occur for a variety reasons including:

- A design feature or physical configurations on a road segment or at an intersection that may adversely affect the visibility of pedestrians or bicyclists to drivers entering and exiting the site, and the visibility of cars to pedestrians and bicyclists;
- High amount of pedestrian activity at the project access points.
- Precluding or substantially hindering of the provision of a planned bike lane or pedestrian facility on a roadway adjacent to the project site.
- The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers may result in vehicle/pedestrian, vehicle/bicycle conflicts.
- The project may result in a substantial increase in pedestrian or bicycle activity without the presence of adequate facilities.

3.5 Parking Capacity

Typical adverse effects on parking occur when an adequate number of spaces are not incorporated in a project design. The regulations are intended to require adequate off-street parking and loading, thereby reducing traffic congestion, allowing more efficient utilization of on-street parking, promoting more efficient loading operations, and reducing the use of public streets for loading purposes. Additionally, the regulations are intended to minimize the secondary effects of vehicles. These may include vehicular noise or visual impacts from headlights and unscreened parked vehicles. Unscreened parked vehicles are a particular concern when parking adjoins or is adjacent to residential areas or preserve systems that are sensitive to noise and lighting.

4.0 GUIDELINES FOR DETERMINING IMPACT SIGNIFICANCE

This section provides guidance for evaluating adverse environmental effects a project may have on traffic. The guidelines for determining significance are organized into eight categories: road segments, intersections, ramps, congestion management plan, hazards due to an existing transportation design feature, hazards to pedestrians or bicyclists, parking capacity, and alternative transportation. A discussion of how to evaluate project and cumulative level impacts is also included in the Transportation and Traffic Report Format and Content Requirement.

4.1 Road Segments

Pursuant to the County's General Plan Public Facilities Element (PFE), new development must provide improvements or other measures to mitigate traffic impacts to avoid:

(a) Reduction in Level of Service (LOS) below "C" for on-site Circulation Element roads;

(b) Reduction in LOS below "D" for off-site and on-site abutting Circulation Element roads; and

(c) "Significantly impacting congestion" on roads that operate at LOS "E" or "F". If impacts cannot be mitigated, the project will be denied unless a statement of overriding findings is made pursuant to the State CEQA Guidelines. The PFE, however, does not include specific guidelines/thresholds for determining the amount of additional traffic that would "significantly impact congestion" on such roads, as that phrase is used in item (c) above.

The County has created the following guidelines to evaluate likely traffic impacts of a proposed project for road segments and intersections serving that project site, for purposes of determining whether the development would "significantly impact congestion" on the referenced LOS E and F roads. The guidelines are summarized in Table 1. The thresholds in Table 1 are based upon average operating conditions on County roadways. It should be noted that these thresholds only establish general guidelines, and that the specific project location must be taken into account in conducting an analysis of traffic impact from new development.

On-site Circulation Element Roads

PFE, Transportation, Policy 1.1 states that "new development shall provide needed roadway expansion and improvements on-site to meet demand created by the development, and to maintain a Level of Service C on Circulation Element Roads during peak traffic hours". Pursuant to this policy, a significant traffic impact would result if:

- ***The additional or redistributed ADT generated by the proposed land development project will cause on-site Circulation Element Roads to operate below LOS C during peak traffic hours except within the Otay Ranch project as defined in the Otay Subregional Plan Text, Volume 2. PFE, Implementation Measure 1.1.2.***

Off-site Circulation Element Roads

PFE, Transportation, Policy 1.1 also states that "new development shall provide needed roadway expansion and improvements off-site to meet demand created

by the development, and to maintain a Level of Service D on Circulation Element Roads." "New development that would significantly impact congestion on roads operating at LOS E or F, either currently or as a result of the project, will be denied unless improvements are scheduled to improve the LOS to D or better or appropriate mitigation is provided." The PFE, however, does not specify what would significantly impact congestion or establish criteria for evaluating when increased traffic volumes would significantly impact congestion. The following significance guidelines provided are the County's preferred method for evaluating whether or not increased traffic volumes generated or redistributed from a proposed project will "significantly impact congestion" on County roads, operating at LOS E or F, either currently or as a result of the project.

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a road segment, unless specific facts show that there are other circumstances that mitigate or avoid such impacts:

- *The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Circulation Element Road or State Highway currently operating at LOS E or LOS F, or will cause a Circulation Element Road or State Highway to operate at a LOS E or LOS F as a result of the proposed project as identified in Table 1, or*

- *The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity.*

Table 1
Measures of Significant Project Impacts to Congestion on Road Segments
Allowable Increases on Congested Road Segments

Level of service	Two-lane road	Four-lane road	Six-lane road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

Notes:

1. By adding proposed project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
2. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

The first significance criterion listed in Table 1 addresses roadways presently operating at LOS E. Based on these criteria, an impact from new development on an LOS E road would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 200 ADT. Using SANDAG's "Brief Guide for Vehicular Traffic Generation Rates for the San Diego Region" for most discretionary projects this would generate less than 25 peak hour trips. On average, during peak hour conditions, this would be

only one additional car every 2.4 minutes. Therefore, the addition of 200 ADT, in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway. Significance criteria were also established for four-lane and six-lane roads operating at LOS E and are based upon the above 24 hour ADT significance criterion established for two-lane roads. The two-lane road criterion was doubled to determine impacts to four-lane roads and tripled to determine impacts to six-lane roads. This was considered to be conservative since the 24 hour per lane road capacity for a 4-lane road is more than double that of a two-lane road and the per lane capacity of a six-lane road is more than triple that of the two-lane road. For LOS E roads, the additional significance criteria are 400 ADT for a four-lane road and 600 ADT for a six-lane road. Similar to criterion for two-lane roads, the 400 ADT for a 4-lane road and 600 ADT for a 6-lane road criteria would generate less than 25 per lane peak hour trips for most discretionary projects. On average, during peak hour conditions, this would be only one additional car per lane every 2.4 minutes. The addition of 200 ADT per lane (400 ADT for a 4 lane road or 600 ADT for a 6 lane road) , in most cases, would result in changes to traffic flow that would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway. Road capacities based upon level of service for County roads (two-lane, four-lane and six-lane) are provided in Attachment A.

The second significance criteria listed in Table 1 addresses roadways presently operating at LOS F. Under LOS F congested conditions, small changes and disruptions to the traffic flow on County Circulation Element Roads can have a greater effect on traffic operations when compared to other LOS conditions. In order to better account for potential effects of increased traffic on LOS F roads more stringent significance criteria was established when compared to that for LOS E. Based on this guidance, an impact from new development on an LOS F road would be reached when the increase in average daily trips (ADT) on a two-lane road exceeds 100. Again, using SANDAG's "Brief Guide for Vehicular Traffic Generation Rates for the San Diego Region" for most discretionary projects this would generate less than 12.5 peak hour trips. On average, during peak hour conditions, this would be only one additional car every 4.8 minutes. The addition of 100 ADT, in most cases, would not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway. The same approach used to determine significance criteria for four-lane and six-lane roads operating at LOS E was used to determine appropriate significance criteria for four-lane and six-lane roads operating at LOS F. Based on this approach, the significance criteria for a four-lane road (200 ADT) and for a six-lane road (300 ADT) would generate less than 12.5 per lane peak hour trips for most discretionary projects. On average, during peak hour conditions, this would be only one additional car per lane every 4.8 minutes. The addition of 100 per lane ADT (200 ADT for a 4-lane road and 300 ADT for a 6-lane road) would, in most cases, not be noticeable to the average driver and therefore would not constitute a significant impact on the roadway. In summary, under extremely congested LOS F conditions, small changes and disruptions to the traffic flow can significantly affect traffic operations and additional project traffic can increase the likelihood or frequency of these events. Therefore, the LOS F ADT significance criteria was set at 100 ADT (50% of the LOS E threshold) to provide a higher level of assurance

that the traffic allowed under the threshold would not significantly impact traffic operation on the road segment.

Non-Circulation Element Residential Streets

Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots and not to carry through traffic, however, for projects that will substantially increase traffic volumes on residential streets, a comparison of the traffic volumes on the residential streets with the recommended design capacity must be provided. Recommended design capacities for residential non-Circulation Element streets are provided in the San Diego County Public and Private Road Standards. Traffic volume that exceeds the design capacity on residential streets may impact residences and should be analyzed on a case-by-case basis.

4.2 Intersections

This section provides guidance for evaluating adverse environmental effects a project may have on signalized and unsignalized intersections.

4.2.1 Signalized

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a road segment:

- ***The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F, or will cause a signalized intersection to operate at a LOS E or LOS F as identified in Table 2.***

Table 2
Measures of Significant Project Impacts to Congestion on Intersections
Allowable Increases on Congested Intersections

Level of service	Signalized	Unsignalized
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement
LOS F	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement

Notes:

1. **A critical movement is one that is experiencing excessive queues.**
2. **By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.**
3. **The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.**

The significance criterion for signalized intersections identified in Table 2 allows an increase in the overall delay at an intersection operating at LOS E of two seconds. This is consistent with the capacity threshold contained in the SANDAG's CMP and guidelines established by the City of San Diego. A delay of two seconds is a small fraction of the typical cycle length for a signalized intersection that ranges between 60 and 120 seconds. The likelihood of increased queues forming due to the additional two seconds of delay is low. Therefore, an increased wait time of two seconds, on average, would result in changes to traffic flow that would not be noticeable to the average driver. Therefore the significance guideline for intersections operating at LOS E is 2 seconds.

The primary significance criterion for signalized intersections operating at LOS F conditions was based upon increased delay at the intersection. Under LOS F congested conditions, small changes and disruptions to the traffic flow to signalized intersections can have a greater effect on overall intersection operations when compared to other LOS conditions. In order to better account for potential effects of increased traffic at signalized intersections operating at LOS F, a more stringent guideline was established when compared to signalized intersection operating at LOS E. A significance guideline of an increased delay of 1 second was established for signalized intersections operating at LOS F. An increase in the overall delay at an intersection of one second, on average, would result in changes to traffic flow that would not be noticeable to the average driver. Therefore the significance guideline for intersections operating at LOS F is 1 second.

Signalized intersections operating at LOS F also have the potential for substantial queuing at specific turning movements that may detrimentally effect overall intersection and/or road segment operations. Thus, an increase of peak hour trips to a critical move was also established as a secondary significance criterion for signalized intersections. A critical movement would be a movement or a lane at an intersection that is experiencing queuing or substantial delay and is affecting the overall operation of the intersection. The increase in peak hour trips to a critical move is a measurement of how many cars can be added to an existing queue. The addition of five trips (peak hour) per critical movement will normally be considered a significant impact. This significance criterion was selected because the five additional trips spread out over the peak hour would not significantly increase the length of an existing queue and would not be noticeable to the average driver (one trip every 12 minutes or 720 seconds). For LOS E intersections, the 5 peak hour trips to a critical movement would not be noticeable to the average driver since the one additional trip during the 12 minute interval on average would clear the traffic signal cycles well within the 12 minute period. It should also be noted that if the 5 additional peak hour trips arrived at the same time these trips would also clear the traffic cycle and existing queue lengths would be re-established.

4.2.2 Unsignalized

The operating parameters and conditions for unsignalized intersections differ dramatically from those of signalized intersections. Very small volume increases on one leg or turn and/or through movement of an unsignalized intersection can substantially affect the calculated delay for the entire intersection. Significance criteria for unsignalized intersections are based upon a minimum number of trips added to a critical movement at an unsignalized intersection.

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or level of service traffic impact on a road segment:

- ***The additional or redistributed ADT generated by the proposed project will add 20 or more peak hour trips to a critical movement of an unsignalized intersection, and cause an unsignalized intersection to operate below LOS D, or***

- ***The additional or redistributed ADT generated by the proposed project will add 20 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or***

- ***The additional or redistributed ADT generated by the proposed project will add 5 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F, or***

- ***The additional or redistributed ADT generated by the proposed project will add 5 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F, or***

- ***Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, it is found that the generation rate is less than those specified above, and would significantly impact the operations of the intersection.***

The significance guidelines for unsignalized intersections identify a minimum number of trips added to a critical movement at an unsignalized intersection. Since the operations of unsignalized intersections under congested conditions are heavily influenced by traffic volume increases on critical moves, the significance guidelines for unsignalized intersections were based upon the number of trips added to a critical movement. This guideline directly relates to the number of vehicles that can be added to an existing queue that forms at the intersection. A significance criteria of twenty trips (peak hour) per critical movement was used for LOS E conditions. Although delays drivers experience under LOS E condition may be noticeable, they are not yet considered

unacceptable. The twenty trips spread out over the peak hour would not likely cause the intersection delay or existing queue lengths to become unacceptable. The twenty trips (peak hour) would not be noticeable to the average driver. A significance guideline of five trips (peak hour) per critical movement was used for LOS F conditions. The five trips spread out over the peak hour would not significantly increase the length of an existing queue and would not be noticeable to the average driver.

The operations of unsignalized intersections under congested conditions are heavily influenced by traffic volume increases on critical moves. Therefore, the significance guidelines for unsignalized intersections are based upon the number of peak hour trips added to a critical movement at that intersection. This guideline examines the number of vehicles that may be added to an existing queue that forms at the intersection by the additional traffic generated by a project. In LOS E situations, the delays that drivers experience are noticeable, but are not considered excessive. A peak hour increase of twenty trips to the critical movement of an unsignalized intersection would be, on average, one additional car every 3.0 minutes or 180 seconds. Assuming the average wait time for a vehicle in the critical movement queue is less than 3.0 minutes, which is typical for LOS E condition, this would not be noticeable to the average driver and would not be considered a significant impact.

For LOS F conditions, a significance threshold of five trips (peak hour) per critical movement was used. The five trips spread out over the peak hour would not significantly increase the length of an existing queue and would not be noticeable to the average driver. Five trips spread out over an hour would be one car every 12 minutes. This typically exceeds the average wait time in the queue and would not be noticeable to the average driver.

4.3 Ramps

Additional or redistributed ADT generated by the proposed project may significantly increase congestion at a freeway ramp. Caltrans' "Guide for the Preparation of Traffic Impact Studies" states that an operational analysis based upon Caltrans Highway Design Manual should be used in the evaluation of the ramps and in the preparation of the operational analysis that Caltrans' Ramp Metering Guidelines should be used. However, specific criteria for the determination of an impact at a ramp are not provided in the above documents.

The CMP includes guidelines for the determination of traffic impacts at a ramp. These guidelines are summarized in Table 3. Table 3 may be used as a guide in determining significant increases in congestion on ramps and for addressing congestion management plan impacts. Other factors that may be considered include ramp metering, location (rural vs. urban), ramp design, and the proximity of adjacent intersections. Coordination with Caltrans and the local jurisdiction should be conducted to determine appropriate impact criteria for the specific ramps being assessed.

County TIF - North County Metro Fee Schedule

County of San Diego TIF Program

NORTH COUNTY METRO FEE SCHEDULE

LAND USE CATEGORY	APPLICABLE FEE Regional	Local	Total
AGRICULTURE (OPEN SPACE)	$880 / acre	$253 / acre	$1,133 / acre
AIRPORT			
Commercial	$30,801 / ksf	$8,849 / ksf	$39,651 / ksf
General Aviation	$2,640 / acre	$759 / acre	$3,399 / acre
Heliports	$44,002 / acre	$12,642 / acre	$56,644 / acre
AUTOMOBILE			
Car Wash			
Automatic	$269,400 / acre	$77,400 / acre	$346,800 / acre
Self-serve	$44,900 / wash stall	$12,900 / wash stall	$57,800 / wash stall
Gasoline			
with/Food Mart	$51,725 / fueling space	$14,861 / fueling space	$66,586 / fueling space
with/Food Mart & Car Wash	$50,108 / fueling space	$14,396 / fueling space	$64,505 / fueling space
Older Service Station Design	$48,492 / fueling space	$13,932 / fueling space	$62,424 / fueling space
Sales (Dealer & Repair)	$16,164 / ksf	$4,644 / ksf	$20,808 / ksf
Auto Repair Center	$6,466 / ksf	$1,858 / ksf	$8,323 / ksf
Auto Parts Sales	$19,397 / ksf	$5,573 / ksf	$24,970 / ksf
Quick Lube	$12,931 /	$3,715 /	$16,646 /
Tire Store	$8,082 / ksf	$2,322 / ksf	$10,404 / ksf
CEMETERY	$2,245 / acre	$645 / acre	$2,890 / acre
CHURCH (OR SYNAGOGUE)	$3,596 / ksf	$1,033 / ksf	$4,630 / ksf
COMMERCIAL/RETAIL			
Super Regional Shopping Center (More than 80 acres, more than 800,000 sq. ft., w/usually 3+ major stores)	$15,715 / ksf	$4,515 / ksf	$20,230 / ksf
Regional Shopping Center (40-80 acres, 400,000-800,000 sq. ft. w/usually 2+ major stores)	$19,981 / ksf	$5,741 / ksf	$25,721 / ksf
Community Shopping Center (15-40 acres, 125,000-400,000 sq. ft., w/usually 1 major store, detached restaurant(s), grocery and drugstore)	$28,018 / ksf	$8,050 / ksf	$36,067 / ksf
Neighborhood Shopping Center (Less than 15 acres, less than 125,000 sq. ft., w/usually grocery & drugstore, cleaners, beauty & barber shop, & fast food services)	$42,026 / ksf	$12,074 / ksf	$54,101 / ksf
Commercial Shops			
Specialty Retail/Strip Commercial	$15,266 / ksf	$4,386 / ksf	$19,652 / ksf
Electronics Superstore	$19,083 / ksf	$5,483 / ksf	$24,565 / ksf
Factory Outlet	$15,266 / ksf	$4,386 / ksf	$19,652 / ksf
Supermarket	$57,248 / ksf	$16,448 / ksf	$73,695 / ksf
Drugstore	$34,349 / ksf	$9,869 / ksf	$44,217 / ksf

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County of San Diego TIF Program

NORTH COUNTY METRO FEE SCHEDULE

LAND USE CATEGORY	APPLICABLE FEE Regional	Local	Total
Convenience Market (15-16 hours)	$190,825 / ksf	$54,825 / ksf	$245,650 / ksf
Convenience Market (24 hours)	$267,155 / ksf	$76,755 / ksf	$343,910 / ksf
Convenience Market (w/gasoline pumps)	$324,403 / ksf	$93,203 / ksf	$417,605 / ksf
Discount Club	$22,899 / ksf	$6,579 / ksf	$29,478 / ksf
Discount Store	$22,899 / ksf	$6,579 / ksf	$29,478 / ksf
Furniture store	$2,290 / ksf	$658 / ksf	$2,948 / ksf
Lumber Store	$11,450 / ksf	$3,290 / ksf	$14,739 / ksf
Home Improvement Superstore	$15,266 / ksf	$4,386 / ksf	$19,652 / ksf
Hardware/Paint Store	$22,899 / ksf	$6,579 / ksf	$29,478 / ksf
Garden Nursery	$15,266 / ksf	$4,386 / ksf	$19,652 / ksf
Mixed Use: Commercial (w/supermarket)	$41,932 / ksf	$12,062 / ksf	$54,043 / ksf
Mixed Use: Commercial/Residential	$1,908 / unit	$548 / unit	$2,457 / unit
EDUCATION			
University (4 years)	$1,078 / student	$310 / student	$1,387 / student
Junior College (2 years)	$534 / student	$154 / student	$688 / student
High School	$548 / student	$157 / student	$705 / student
Middle/Junior High	$552 / student	$159 / student	$711 / student
Elementary	$647 / student	$186 / student	$832 / student
Day Care	$1,931 / child	$555 / child	$2,485 / child
FINANCIAL			
Bank (Walk-In only)	$51,860 / ksf	$14,900 / ksf	$66,759 / ksf
with Drive-Through	$69,146 / ksf	$19,866 / ksf	$89,012 / ksf
Drive-Through only	$86,433 / lane	$24,833 / lane	$111,265 / lane
Drive-Through only (one-way)	$43,216 / lane	$12,416 / lane	$55,633 / lane
Savings & Loan	$20,744 / ksf	$5,960 / ksf	$26,704 / ksf
Drive-Through only	$86,433 / lane	$24,833 / lane	$111,265 / lane
Drive-Through only (one-way)	$43,216 / lane	$12,416 / lane	$55,633 / lane
HOSPITAL			
General	$8,800 / bed	$2,528 / bed	$11,329 / bed
Convalescent/Nursing	$1,320 / bed	$379 / bed	$1,699 / bed
INDUSTRIAL			
Industrial/Business Park (commercial included)	$5,747 / ksf	$1,651 / ksf	$7,398 / ksf
Industrial Park (no commercial)	$3,520 / ksf	$1,011 / ksf	$4,532 / ksf
Industrial Plant (multiple shifts)	$4,355 / ksf	$1,251 / ksf	$5,607 / ksf
Manufacturing/Assembly	$1,742 / ksf	$501 / ksf	$2,243 / ksf
Warehousing	$2,178 / ksf	$626 / ksf	$2,803 / ksf
Storage	$871 / ksf	$250 / ksf	$1,121 / ksf
Science Research & Development	$3,484 / ksf	$1,001 / ksf	$4,485 / ksf
Landfill & Recycling Center	$2,613 / acre	$751 / acre	$3,364 / acre
LIBRARY	$19,756 / ksf	$5,676 / ksf	$25,432 / ksf
LODGING			

County of San Diego TIF Program

NORTH COUNTY METRO FEE SCHEDULE

LAND USE CATEGORY	APPLICABLE FEE		
	Regional	Local	Total
Hotel (w/convention facilities/restaurant)	$4,310 / room	$1,238 / room	$5,549 / room
Motel	$3,879 / room	$1,115 / room	$4,994 / room
Resort Hotel	$3,448 / room	$991 / room	$4,439 / room
Business Hotel	$3,017 / room	$867 / room	$3,884 / room
MILITARY	$1,100 / person	$316 / person	$1,416 / person
OFFICE			
Standard Commercial Office (less than 100,000 sq. ft.)	$8,621 / ksf	$2,477 / ksf	$11,098 / ksf
Large (High-Rise) Commercial Office (more than 100,000 sq. ft., 6+ stories)	$7,404 / ksf	$2,127 / ksf	$9,531 / ksf
Office Park (400,000+ sq. ft.)	$5,226 / ksf	$1,502 / ksf	$6,728 / ksf
Single Tenant Office	$6,097 / ksf	$1,752 / ksf	$7,849 / ksf
Corporate Headquarters	$3,049 / ksf	$876 / ksf	$3,925 / ksf
Government (Civic Center)	$11,315 / ksf	$3,251 / ksf	$14,566 / ksf
Post Office			
Central/Walk-In Only	$33,944 / ksf	$9,752 / ksf	$43,697 / ksf
Community (not including mail drop lane)	$75,432 / ksf	$21,672 / ksf	$97,104 / ksf
Community (w/mail drop lane)	$113,148 / ksf	$32,508 / ksf	$145,656 / ksf
Mail Drop Lane only	$565,740 / lane	$162,540 / lane	$728,280 / lane
Mail Drop Lane only (one-way)	$282,870 / lane	$81,270 / lane	$364,140 / lane
Department of Motor Vehicles	$67,889 / ksf	$19,505 / ksf	$87,394 / ksf
Medical-Dental	$20,205 / ksf	$5,805 / ksf	$26,010 / ksf
PARKS			
City (developed w/meeting rooms and sports facilities)	$21,103 / acre	$6,063 / acre	$27,166 / acre
Regional (developed)	$8,441 / acre	$2,425 / acre	$10,866 / acre
Neighborhood/County (undeveloped)	$2,110 / acre	$606 / acre	$2,717 / acre
State (average 1000 acres)	$422 / acre	$121 / acre	$543 / acre
Amusement (Theme)	$33,765 / acre	$9,701 / acre	$43,466 / acre
San Diego Zoo	$48,537 / acre	$13,945 / acre	$62,482 / acre
Sea World	$33,765 / acre	$9,701 / acre	$43,466 / acre
RECREATION			
Beach, Ocean or Bay	$245,154 / klf shore	$70,434 / klf shore	$315,588 / klf shore
Beach, Lake (fresh water)	$20,430 / klf shore	$5,870 / klf shore	$26,299 / klf shore
Bowling Center	$12,258 / ksf	$3,522 / ksf	$15,779 / ksf
Campground	$1,634 / campsite	$470 / campsite	$2,104 / campsite
Golf Course	$2,860 / acre	$822 / acre	$3,682 / acre
Driving Range only	$28,601 / acre	$8,217 / acre	$36,819 / acre
Marinas	$1,634 / berth	$470 / berth	$2,104 / berth
Multi-purpose (miniature golf, video arcade, batting cage, etc.)	$36,773 / acre	$10,565 / acre	$47,338 / acre
Racquetball/Health Club	$12,258 / ksf	$3,522 / ksf	$15,779 / ksf

County of San Diego TIF Program

NORTH COUNTY METRO FEE SCHEDULE

LAND USE CATEGORY	APPLICABLE FEE		
	Regional	Local	Total
Tennis Courts	$6,537 / acre	$1,878 / acre	$8,416 / acre
Sports Facilities			
Outdoor Stadium	$20,430 / acre	$5,870 / acre	$26,299 / acre
Indoor Arena	$12,258 / acre	$3,522 / acre	$15,779 / acre
Racetrack	$16,344 / acre	$4,696 / acre	$21,039 / acre
Theaters (multiplex w/matinee)	$29,814 / ksf	$8,566 / ksf	$38,379 / ksf
RESIDENTIAL			
Estate, Urban or Rural (average 1-2 DU/acre)	$5,226 / unit	$1,502 / unit	$6,728 / unit
Single Family Detached (average 3-6 DU/acre)	$4,355 / unit	$1,251 / unit	$5,607 / unit
Condominium (or any multi-family 6-20 DU/acre)	$3,484 / unit	$1,001 / unit	$4,485 / unit
Apartment (or any multi-family units more than 20 DU/acre)	$2,613 / unit	$751 / unit	$3,364 / unit
Military Housing (off-base, multifamily)			
(less than 6 DU/acre)	$3,484 / unit	$1,001 / unit	$4,485 / unit
(6-20 DU/acre)	$2,613 / unit	$751 / unit	$3,364 / unit
Mobile Home			
Family	$2,178 / unit	$626 / unit	$2,803 / unit
Adults Only	$1,307 / unit	$375 / unit	$1,682 / unit
Retirement Community	$1,742 / unit	$501 / unit	$2,243 / unit
Congregate Care Facility	$1,091 / unit	$313 / unit	$1,405 / unit
RESTAURANT			
Quality	$39,512 / ksf	$11,352 / ksf	$50,864 / ksf
Sit-down, high turnover	$63,219 / ksf	$18,163 / ksf	$81,382 / ksf
Fast Food (w/drive-through)	$256,628 / ksf	$73,788 / ksf	$330,616 / ksf
Fast Food (without drive-through)	$276,584 / ksf	$79,464 / ksf	$356,048 / ksf
Delicatessen (7am-4pm)	$59,268 / ksf	$17,028 / ksf	$76,296 / ksf
TRANSPORTATION			
Bus Depot	$11,225 / ksf	$3,225 / ksf	$14,450 / ksf
Truck Terminal	$4,490 / ksf	$1,290 / ksf	$5,780 / ksf
Waterport/Marine Terminal	$76,330 / berth	$21,930 / berth	$98,260 / berth
Transit Station (Light Rail w/parking)	$134,700 / acre	$38,700 / acre	$173,400 / acre
Park & Ride Lots	$179,600 / acre	$51,600 / acre	$231,200 / acre
Park & Ride Lots	$179,600 / acre	$51,600 / acre	$231,200 / acre

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APPENDIX B

- Excerpts from the University Commons Report

University Commons Specific Plan Amendment

Traffic Analysis

Revised: December 12, 2000

Prepared for:
The City of San Marcos

Prepared By:

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JA0397

4.0 Project Traffic

The University Commons Specific Plan Area consists of approximately 416 acres. Proposed land uses in University Commons include single and multi-family residential, commercial, industrial, recreational and open space uses. This section defines the amount of trips that would be expected from these developments.

Project-Related Traffic

Any increase in the intensity of use of the site will result in some level of increase in traffic on streets and driveways leading to the site. Any traffic that can be attributed to the proposed project site is known as project-related traffic. Project-related traffic consists of trips on the street system that begin or end on the project site as a result of the development of the proposed project. Project related traffic is a function of the extent and type of development proposed for the site. This information is used to establish trip generation for the site.

Project Trip Generation

Trip generation is a measure or forecast of the number of trips that begin or end at the project site. All or part of these trips will result in traffic increases on the streets where they occur. The traffic generated is a function of the extent and type of development proposed for the site.

Vehicular traffic generation characteristics for projects are normally estimated based on rates in the San Diego Association of Governments (SANDAG) "*(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*" (dated 1998). This manual provides standards and recommendations for the probable traffic generation for various land uses based upon local, regional and nation-wide studies of existing developments in comparable settings. Appendix C contains excerpts from the trip generation manual used in this analysis.

A distinction is drawn between total project vehicle trips and external project vehicle trips. The total project vehicle trips are all trips that will be made to or from the project when it is ultimately constructed. The external project vehicle trips are the total project vehicle trips minus the project vehicle trips that are captured within the project itself. Since the proposed project consists of a variety of land uses (residential, industrial, recreation and commercial), some portion of the trip purposes will be satisfied within the boundaries of the project site itself. This phenomenon is defined as an internal trip capture. By examining the relative trip generation potential of the trip attractors (industrial, recreational and commercial) as compared to the project as a whole, an internal trip capture rate of 4% was used for the near-term and long-term future analysis. The internal capture rate was determined by analyzing the different land uses that comprise the proposed project. A conservative percentage of the total trips generated by the trip attractors of the proposed project was assumed to originate from the within project (e.g. a resident makes a trip to the store to purchase flu medicine). The percentage of these trips compared to the total trips generated by the project results in the internal trip capture rate. The external project trips are used in this traffic impact study because this number directly describes the impact the proposed project has on the surrounding roadway network.

Table 3 summarizes the trips generated by the proposed project.

Table 3
Trip Generation for University Commons– Approved, Preferred and Alternative Plans

Land Use	*Intensity/ Unit*	*Daily Trip Rate per Unit*	*Daily Trips*	*AM In*	*AM Out*	*PM In*	*PM Out*
University Commons Project- As Approved							
Single Family Residential	489 du	10/du	4,890	117	274	342	147
Multi-family Residential (<20/acre)	267 du	8/du	2,136	34	137	150	64
Multi-family Residential (>20/acre)	947 du	6/du	5,682	91	364	358	153
Elementary School	10 acres	60/acre	600	101	67	13	29
Village Commercial Zone (Neighborhood Shopping Center)	30,000 sf	120/ksf	3,600	86	58	180	180
Recreation Area (Developed City Park)	10 acres	50/acre	500	10	10	20	20
Subtotal University Commons As Approved			***17,408***	***440***	***909***	***1,062***	***594***
University Commons Project "Preferred Plan"							
Single Family Residential	471 du	10/du	4,710	113	264	330	141
Multi-family Residential (<20/acre)	225 du	8/du	1,800	29	115	126	54
Multi-family Residential (>20/acre)	480 du	6/du	2,880	46	184	181	78
Mixed-Use Area (Neighborhood Comm'l)	25,000 sf	120/ksf	3,000	72	48	150	150
Recreation Area (Developed City Park)	6.1 acres	50/acre	305	6	6	12	12
Light Industrial	12.8 acre	200/acre	2,560	246	61	61	246
Phase One Subtotal			***9,072***	***194***	***402***	***555***	***330***
Phase Two Subtotal			***6,183***	***318***	***277***	***306***	***351***
Subtotal University Commons "Preferred Plan"			***15,255***	***512***	***679***	***861***	***681***
Net Change Approved vs Preferred Plan			***-2,153***	***72***	***-230***	***-202***	***87***
University Commons Project "Alternative Plan"							
Phase One							
Single Family Residential	581 du	10/du	5,810	139	325	407	174
Multi-family Residential	225 du	8/du	1,800	29	115	126	54
Mixed-Use Area (Neighborhood Comm'l)	25,000 sf	120/ksf	3,000	72	48	150	150
Recreation Area (Developed City Park)	6.1 acres	50/acre	305	6	6	12	12
Light Industrial	12.8 acre	200/acre	2,560	246	61	61	246
Phase One Subtotal			***7,919***	***181***	***323***	***487***	***300***
Phase Two Subtotal			***5,556***	***311***	***233***	***269***	***336***
Subtotal University Commons "Alternative Plan"			***13,475***	***492***	***556***	***756***	***636***
Net Change Approved vs Alternative Plan			***-3,933***	***52***	***-353***	***-306***	***43***

Table 3 shows that the University Commons "Preferred Plan" will generate a total of 9,072 daily trips in Phase One and 6,183daily trips in Phase Two for a total of 15,255 daily trips. This represents a reduction of 2,153 daily trips from what was previously approved for the site. The "Alternative Plan" project will generate 7,919 daily trips in Phase One and 5,556 daily trips in Phase Two. The total trip generation for the "Alternative Plan" is 13,475, or 3,933 fewer trips than the number of trips that would have been generated by the previously approved project. Phase One consists of roughly sixty-percent of the residential development, the mixed-use area and the recreation area. In Phase Two the remainder of the residential and light industrial area will be developed.

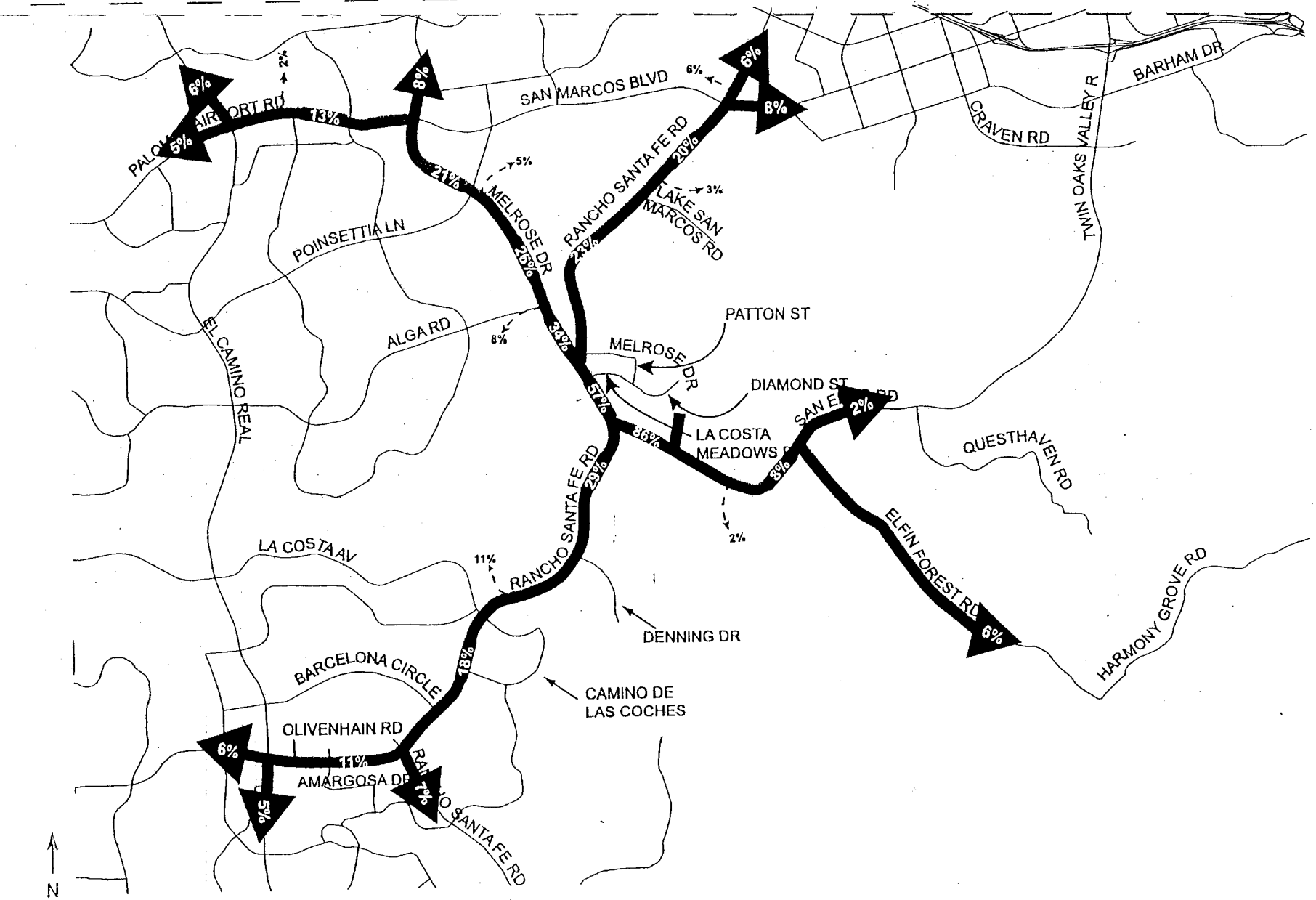
Project Trip Distribution

Trip distribution is the process of identifying the probable destinations, directions, or traffic routes that project related traffic will likely affect. The potential interaction between the proposed development and surrounding residential areas, services, and regional access routes are considered in order to identify the routes where project traffic will distribute.

Trip distribution information can be estimated from observed traffic patterns or experience. It can also be obtained from regional traffic forecasting models developed to analyze future traffic conditions on roadways. In the San Diego region, SANDAG has prepared a traffic-forecasting model, products that are available to municipalities and consultants. Trip distribution information can be obtained from the SANDAG traffic model.

Katz, Okitsu & Associates used SANDAG's Year 2005 and Year 2020 Cities/County travel demand models and commissioned a select zone analysis for the project for both the near-term and long-term scenarios. This analysis provided a distribution and assignment of project traffic onto the roadway network. Appendix C contains a copy of the SANDAG plots showing the study area and distribution.

Figures 8a and 8b show the proportion of project traffic that will use various street segments under near-term and long-term conditions. Figures 9a, 9b and 9c show the net increase in trips that the proposed project "Preferred Plan" will add to the surrounding street network, and Figures 9d, 9e and 9f show the same information for the "Alternative Plan" scenario.



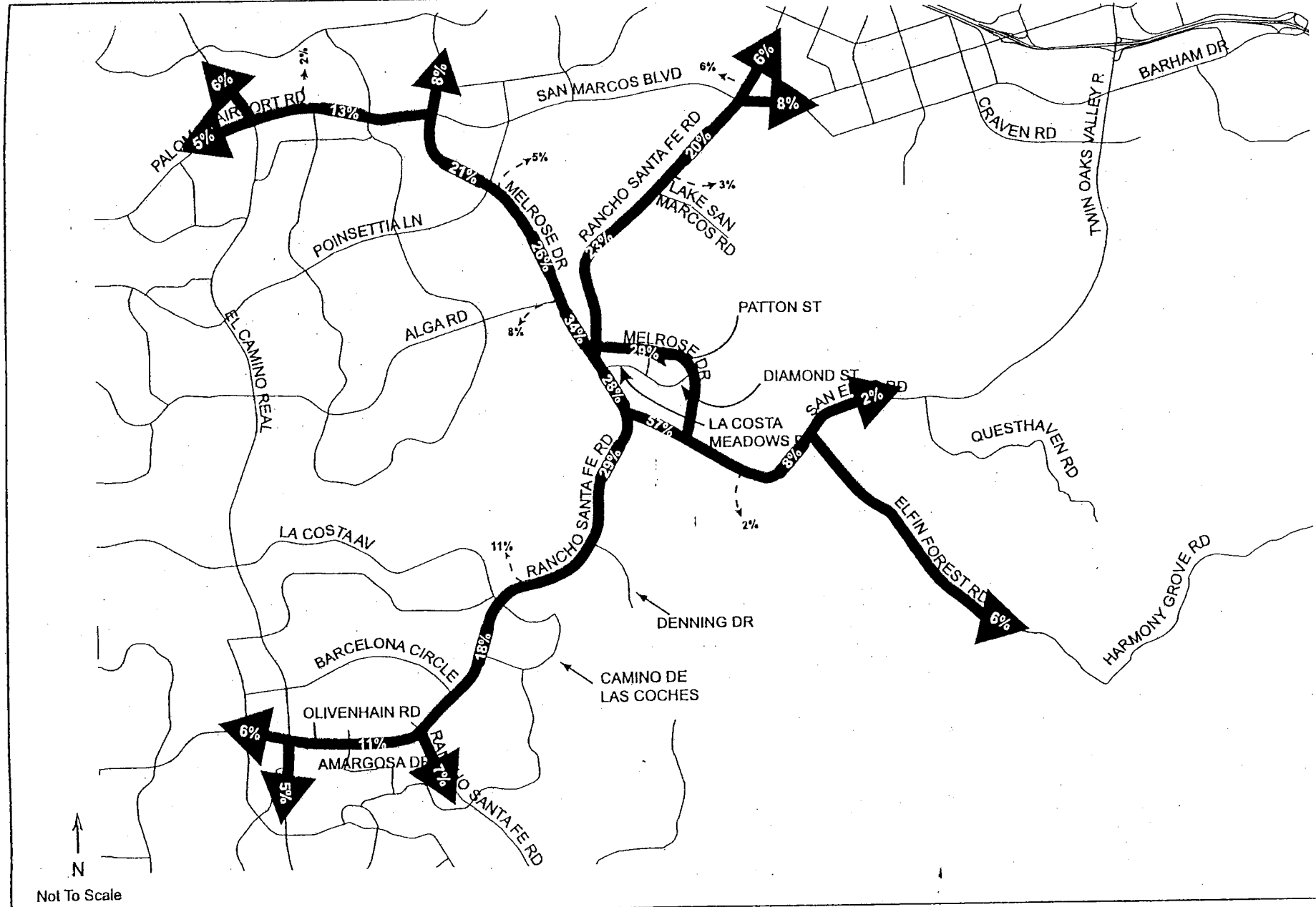
Last Revised: December 13, 2000

Figure 8a

Phase One
Project Trip Distribution

Katz, Okitsu & Associates
Traffic Engineers and Transportation Planners

University Commons
Traffic Analysis



Last Revised: December 13, 2000

Figure 8b

Phase Two
Project Trip Distribution

Katz, Okitsu & Associates
Traffic Engineers and Transportation Planners

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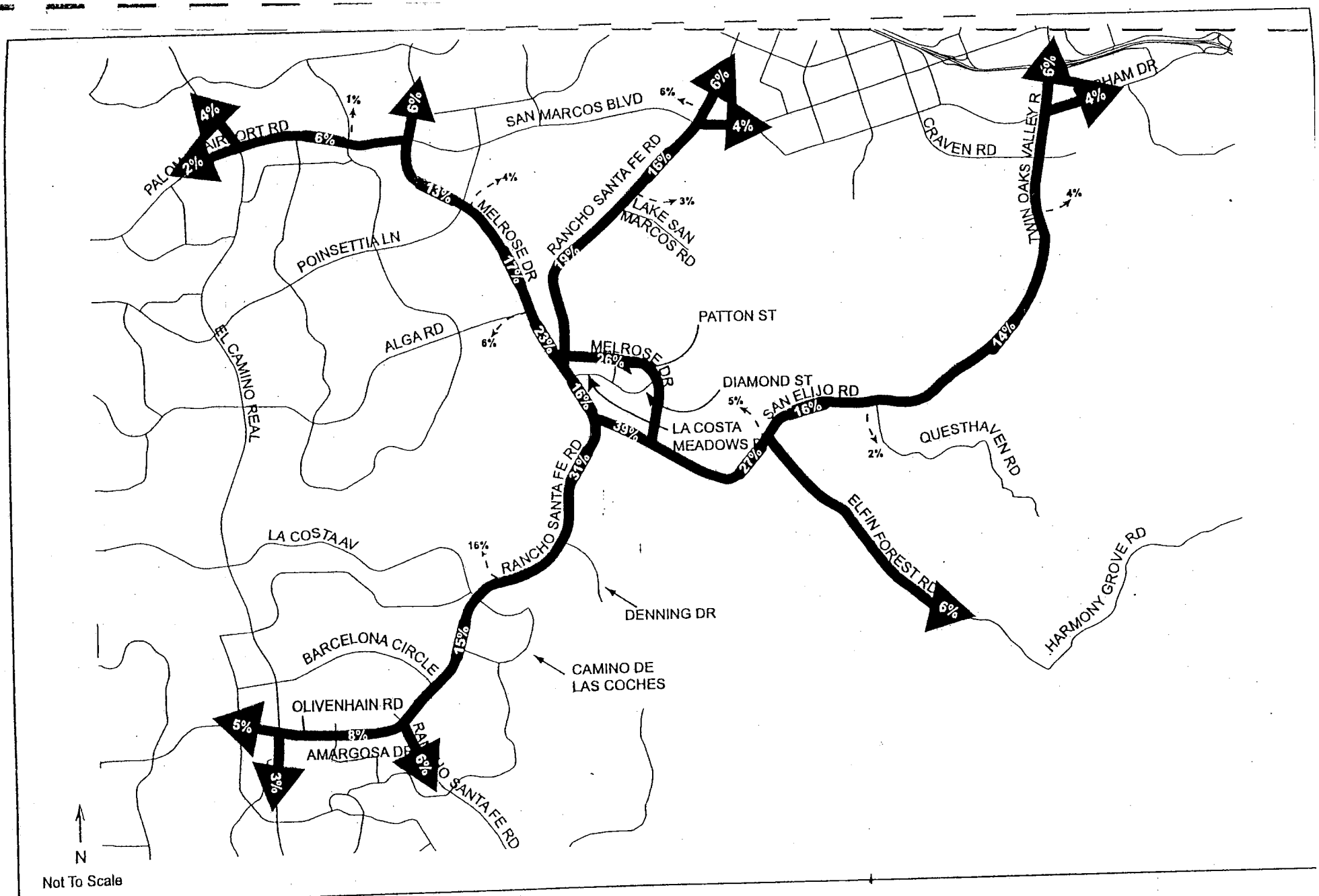
Traffic Analysis



Last Revised: December 13, 2000

Figure 8c

Long-Term
Project Trip Distribution

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Traffic Analysis

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Traffic Engineers and Transportation Planners

APPENDIX C

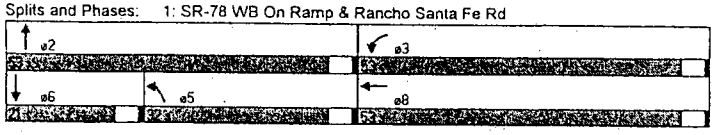
- Existing Conditions Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt					0.851							0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	1585	0	1770	3539	0	0	3539	1583
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1770	1585	0	1770	3539	0	0	3539	1583
Satd. Flow (RTOR)					134							307
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	0	0	790	1	239	423	691	0	0	476	289
Adj. Flow (vph)	0	0	0	840	1	254	450	735	0	0	506	307
Lane Group Flow (vph)	0	0	0	840	255	0	450	735	0	0	506	307
Turn Type				Prot			Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases												6
Detector Phases				3	8		5	2			6	6
Minimum Initial (s)				4.0	4.0		4.0	4.0			4.0	4.0
Minimum Split (s)				8.5	20.5		8.5	20.5			20.5	20.5
Total Split (s)	0.0	0.0	0.0	53.0	53.0	0.0	32.0	53.0	0.0	0.0	21.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	30.2%	50.0%	0.0%	0.0%	19.8%	19.8%
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Act Effct Green (s)				49.0	49.0		28.0	49.0			17.0	17.0
Actuated g/C Ratio				0.46	0.46		0.26	0.46			0.16	0.16
v/c Ratio				1.03	0.32		0.96	0.45			0.89	0.60
Control Delay				67.9	9.3		66.6	17.1			63.0	10.0
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0
Total Delay				67.9	9.3		66.6	17.1			63.0	10.0
LOS				E	A		E	B			E	B
Approach Delay					54.3			35.9			43.0	
Approach LOS					D			D			D	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 93 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 44.3 Intersection LOS: D
Intersection Capacity Utilization 95.1% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: SR-78 WB On Ramp & Rancho Santa Fe Rd



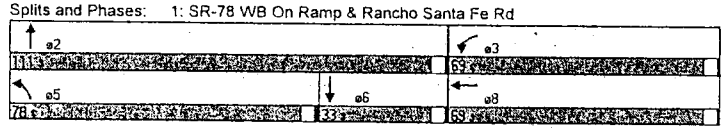
Y:\040912-Lago De San Marcos (STD)\Analysis\Synchro\01-25-06\Existing AM.sy7
J. Bavos/V Haskell 040912-Lago De San Marcos
Darnell & Associates, Inc.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt					0.850							0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	1583	0	1770	3539	0	0	3539	1583
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1770	1583	0	1770	3539	0	0	3539	1583
Satd. Flow (RTOR)					216							430
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	0	0	450	0	243	707	693	0	0	437	404
Adj. Flow (vph)	0	0	0	479	0	259	752	737	0	0	465	430
Lane Group Flow (vph)	0	0	0	479	259	0	752	737	0	0	465	430
Turn Type				Prot			Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases												6
Detector Phases				3	8		5	2			6	6
Minimum Initial (s)				4.0	4.0		4.0	4.0			4.0	4.0
Minimum Split (s)				8.5	20.5		8.5	20.5			20.5	20.5
Total Split (s)	0.0	0.0	0.0	69.0	69.0	0.0	78.0	111.0	0.0	0.0	33.0	33.0
Total Split (%)	0.0%	0.0%	0.0%	38.3%	38.3%	0.0%	43.3%	61.7%	0.0%	0.0%	18.3%	18.3%
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Act Effct Green (s)				52.4	52.4		82.2	119.6			33.4	33.4
Actuated g/C Ratio				0.29	0.29		0.46	0.66			0.19	0.19
v/c Ratio				0.93	0.42		0.93	0.31			0.71	0.67
Control Delay				86.8	10.8		49.1	1.7			76.4	10.8
Queue Delay				0.0	0.0		0.1	0.2			0.0	0.0
Total Delay				86.8	10.8		49.2	1.9			76.4	10.8
LOS				F	B		D	A			E	B
Approach Delay					60.2			25.8			44.9	
Approach LOS					E			C			D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 96 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 39.4 Intersection LOS: D
Intersection Capacity Utilization 99.1% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: SR-78 WB On Ramp & Rancho Santa Fe Rd



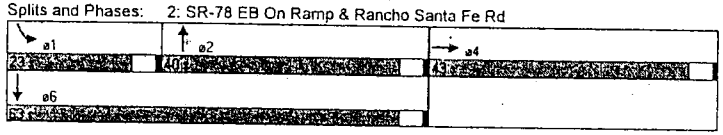
Y:\040912-Lago De San Marcos (STD)\Analysis\Synchro\01-25-06\Existing PM.sy7
J. Bavos/V Haskell 040912-Lago De San Marcos
Darnell & Associates, Inc.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected		0.950								0.950		
Satd. Flow (prot)	0	1770	2787	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted		0.950								0.950		
Satd. Flow (perm)	0	1770	2787	0	0	0	0	3539	1583	1770	3539	0
Satd. Flow (RTOR)			56						543			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	301	0	710	0	0	0	0	654	489	167	1309	0
Adj. Flow (vph)	334	0	789	0	0	0	0	727	543	186	1454	0
Lane Group Flow (vph)	0	334	789	0	0	0	0	727	543	186	1454	0
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phases	4	4	4					2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	20.5					20.5	20.5	8.5	20.5	
Total Split (s)	43.0	43.0	43.0	0.0	0.0	0.0	0.0	40.0	40.0	23.0	63.0	0.0
Total Split (%)	40.6%	40.6%	40.6%	0.0%	0.0%	0.0%	0.0%	37.7%	37.7%	21.7%	59.4%	0.0%
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effct Green (s)		34.0	34.0					44.4	44.4	15.6	64.0	
Actuated g/C Ratio		0.32	0.32					0.42	0.42	0.15	0.60	
v/c Ratio		0.59	0.85					0.49	0.55	0.72	0.68	
Control Delay		34.0	40.1					11.0	2.6	56.4	4.7	
Queue Delay		0.0	0.0					0.0	0.0	0.0	0.2	
Total Delay		34.0	40.1					11.0	2.6	56.4	4.9	
LOS		C	D					B	A	E	A	
Approach Delay		38.3						7.4			10.8	
Approach LOS		D						A			B	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 89 (84%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 17.4 Intersection LOS: B
Intersection Capacity Utilization 95.1% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 2: SR-78 EB On Ramp & Rancho Santa Fe Rd

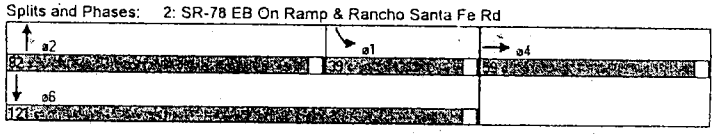


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	2787	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	2787	0	0	0	0	3539	1583	1770	3539	0
Satd. Flow (RTOR)			420						464			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	384	2	512	0	0	0	0	1066	670	220	696	0
Adj. Flow (vph)	400	2	533	0	0	0	0	1110	698	229	725	0
Lane Group Flow (vph)	0	402	533	0	0	0	0	1110	698	229	725	0
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phases	4	4	4					2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	20.5					20.5	20.5	8.5	20.5	
Total Split (s)	59.0	59.0	59.0	0.0	0.0	0.0	0.0	82.0	82.0	39.0	121.0	0.0
Total Split (%)	32.8%	32.8%	32.8%	0.0%	0.0%	0.0%	0.0%	45.6%	45.6%	21.7%	67.2%	0.0%
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effct Green (s)		46.0	46.0					87.0	87.0	35.0	126.0	
Actuated g/C Ratio		0.26	0.26					0.48	0.48	0.19	0.70	
v/c Ratio		0.89	0.52					0.65	0.69	0.67	0.29	
Control Delay		85.6	12.8					3.9	5.1	66.6	17.9	
Queue Delay		0.8	0.0					0.0	0.0	0.0	0.4	
Total Delay		86.4	12.8					3.9	5.1	66.6	18.2	
LOS		F	B					A	A	E	B	
Approach Delay		44.4						4.4			29.8	
Approach LOS		D						A			C	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 34 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 21.1 Intersection LOS: C
Intersection Capacity Utilization 99.1% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 2: SR-78 EB On Ramp & Rancho Santa Fe Rd



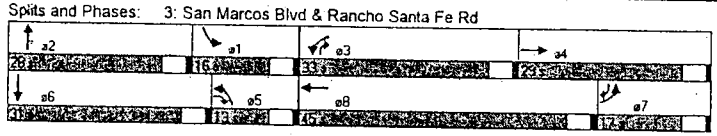
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.995				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3522	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3522	0	3433	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			55		4				121			37
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	285	706	51	421	1033	34	137	463	625	86	673	430
Adj. Flow (vph)	310	767	55	458	1123	37	149	503	679	93	732	467
Lane Group Flow (vph)	310	767	55	458	1160	0	149	503	679	93	732	467
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6
Detector Phases	7	4	5	3	8		5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5	8.5	8.5	20.5		8.5	20.5	8.5	8.5	20.5	8.5
Total Split (s)	17.0	29.0	13.0	33.0	45.0	0.0	13.0	28.0	33.0	16.0	31.0	17.0
Total Split (%)	16.0%	27.4%	12.3%	31.1%	42.5%	0.0%	12.3%	26.4%	31.1%	15.1%	29.2%	16.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	Max	C-Max	None
Act Effct Green (s)	14.8	29.9	38.9	23.8	38.9		9.0	24.2	48.1	12.0	27.2	46.1
Actuated g/C Ratio	0.14	0.28	0.37	0.22	0.37		0.08	0.23	0.45	0.11	0.26	0.43
v/c Ratio	0.65	0.77	0.09	0.59	0.90		0.51	0.62	0.87	0.46	0.81	0.66
Control Delay	50.8	42.2	3.9	24.7	33.6		41.8	30.0	32.6	49.7	41.9	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	42.2	3.9	24.7	33.6		41.8	30.0	32.6	49.7	41.9	25.6
LOS	D	D	A	C	C		D	C	C	D	D	C
Approach Delay		42.7			31.1			32.7			36.6	
Approach LOS		D			C			C			D	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 50 (47%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 35.2 Intersection LOS: D
Intersection Capacity Utilization 73.6% ICU Level of Service D
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Existing-AM
3: San Marcos Blvd & Rancho Santa Fe Rd

Splits and Phases: 3: San Marcos Blvd & Rancho Santa Fe Rd



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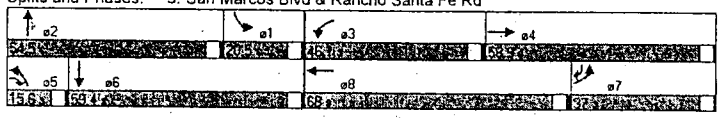
J. Bavos/V Haskell
Darnell & Associates, Inc.
040912-Lago De San Marcos

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.993				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3514	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3514	0	3433	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			73		3				88			17
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	735	703	74	498	1360	65	124	1069	162	141	538	601
Adj. Flow (vph)	742	710	75	503	1374	66	125	1080	164	142	543	607
Lane Group Flow (vph)	742	710	75	503	1440	0	125	1080	164	142	543	607
Turn Type	Prot		pm+ov	Prot			Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4						2			6
Detector Phases	7	4	5	3	8		5	2	2	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5	8.5	8.5	20.5		8.5	20.5	20.5	20.5	20.5	8.5
Total Split (s)	37.0	58.9	15.6	46.1	68.0	0.0	15.6	54.5	54.5	20.5	59.4	37.0
Total Split (%)	20.6%	32.7%	8.7%	25.6%	37.8%	0.0%	8.7%	30.3%	30.3%	11.4%	33.0%	20.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	Max	C-Max	None
Act Effct Green (s)	33.0	65.9	80.9	31.1	64.0		11.0	50.5	50.5	16.5	56.0	89.0
Actuated g/C Ratio	0.18	0.37	0.45	0.17	0.36		0.06	0.28	0.28	0.09	0.31	0.49
v/c Ratio	1.18	0.55	0.10	0.85	1.15		0.60	1.09	0.32	0.88	0.49	0.77
Control Delay	156.8	48.1	6.6	76.0	130.1		91.9	104.0	24.4	112.7	43.9	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	156.8	48.1	6.6	76.0	130.1		91.9	104.0	24.4	112.7	43.9	27.6
LOS	F	D	A	E	F		F	F	C	F	D	C
Approach Delay		98.9			116.1			93.3			43.8	
Approach LOS		F			F			F			D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 90 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 91.5 Intersection LOS: F
Intersection Capacity Utilization 111.3% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 3: San Marcos Blvd & Rancho Santa Fe Rd



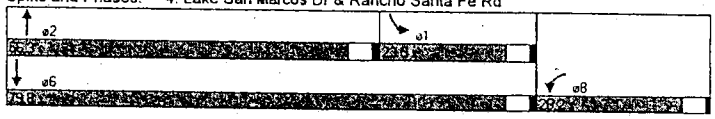
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.989			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3500	0	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3500	0	1770	3539
Satd. Flow (RTOR)		238	10			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	68	224	1007	77	136	1091
Adj. Flow (vph)	72	238	1071	82	145	1161
Lane Group Flow (vph)	72	238	1153	0	145	1161
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.5	20.5	20.5		8.5	20.5
Total Split (s)	26.2	26.2	56.3	0.0	23.5	79.8
Total Split (%)	24.7%	24.7%	53.1%	0.0%	22.2%	75.3%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max
Act Effct Green (s)	10.1	10.1	64.4		19.5	87.9
Actuated g/C Ratio	0.10	0.10	0.61		0.18	0.83
v/c Ratio	0.43	0.65	0.54		0.44	0.40
Control Delay	52.1	14.5	13.6		29.2	1.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	52.1	14.5	13.6		29.2	1.0
LOS	D	B	B		C	A
Approach Delay	23.2		13.6			4.1
Approach LOS	C		B			A

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 91 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 10.2 — Intersection LOS: B
Intersection Capacity Utilization 51.6% — ICU Level of Service A
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Existing-AM
4: Lake San Marcos Dr & Rancho Santa Fe Rd

Splits and Phases: 4: Lake San Marcos Dr & Rancho Santa Fe Rd



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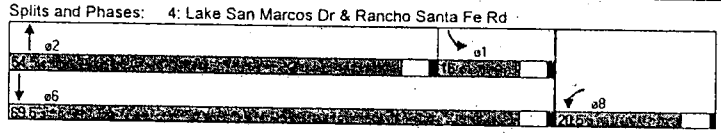
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.986			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3490	0	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3490	0	1770	3539
Satd. Flow (RTOR)		86	20			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	71	83	1304	136	136	978
Adj. Flow (vph)	74	86	1358	142	142	1019
Lane Group Flow (vph)	74	86	1500	0	142	1019
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.5	20.5	20.5		8.5	20.5
Total Split (s)	20.5	20.5	54.5	0.0	15.0	69.5
Total Split (%)	22.8%	22.8%	60.6%	0.0%	16.7%	77.2%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max
Act Effct Green (s)	9.4	9.4	59.6		11.0	75.4
Actuated g/C Ratio	0.10	0.10	0.66		0.12	0.84
v/c Ratio	0.40	0.35	0.65		0.66	0.34
Control Delay	43.2	12.7	11.5		42.8	0.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	43.2	12.7	11.5		42.8	0.8
LOS	D	B	B		D	A
Approach Delay	26.8		11.5			5.9
Approach LOS	C		B			A

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 19 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 10.1 — Intersection LOS: B
Intersection Capacity Utilization 61.8% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Lake San Marcos Dr & Rancho Santa Fe Rd



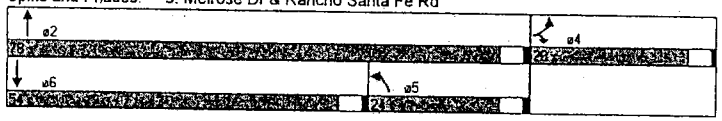
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	1863	1863
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	1863	1863
Satd. Flow (RTOR)		361				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	273	411	430	805	926	0
Adj. Flow (vph)	281	424	443	830	955	0
Lane Group Flow (vph)	281	424	443	830	955	0
Turn Type		Prot	Prot			Perm
Protected Phases	4	4	5	2	6	
Permitted Phases						6
Detector Phases	4	4	5	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	20.5
Total Split (s)	28.0	28.0	24.0	78.0	54.0	54.0
Total Split (%)	26.4%	26.4%	22.6%	73.6%	50.9%	50.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	20.6	20.6	20.0	74.1	50.1	
Actuated g/C Ratio	0.20	0.20	0.19	0.72	0.49	
v/c Ratio	0.79	0.70	1.28	0.32	1.05	
Control Delay	55.7	13.7	183.7	6.0	72.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	55.7	13.7	183.7	6.0	72.2	
LOS	E	B	F	A	E	
Approach Delay	30.4			67.8	72.2	
Approach LOS	C			E	E	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 102.7
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.28
Intersection Signal Delay: 60.2 — Intersection LOS: E
Intersection Capacity Utilization 97.7% — ICU Level of Service F
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Existing-AM
5: Melrose Dr & Rancho Santa Fe Rd

Splits and Phases: 5: Melrose Dr & Rancho Santa Fe Rd



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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	1863	1583
Satd. Flow (RTOR)		346				112
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	266	483	259	972	819	207
Adj. Flow (vph)	274	498	267	1002	844	213
Lane Group Flow (vph)	274	498	267	1002	844	213
Turn Type		Prot	Prot			Perm
Protected Phases	4	4	5	2	6	
Permitted Phases						6
Detector Phases	4	4	5	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	20.5
Total Split (s)	53.0	53.0	32.0	127.0	95.0	95.0
Total Split (%)	29.4%	29.4%	17.8%	70.6%	52.8%	52.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	32.2	32.2	28.1	123.3	91.3	91.3
Actuated g/C Ratio	0.20	0.20	0.17	0.75	0.56	0.56
v/c Ratio	0.79	0.84	0.88	0.38	0.81	0.23
Control Delay	78.2	32.3	94.4	8.2	38.4	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.2	32.3	94.4	8.2	38.4	10.0
LOS	E	C	F	A	D	A
Approach Delay	48.6			26.3	32.6	
Approach LOS	D			C	C	

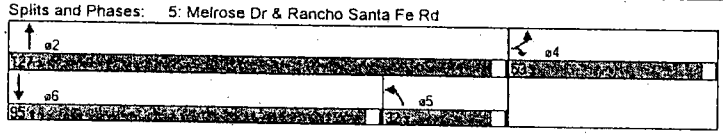
Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 163.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 34.0
Intersection Capacity Utilization 82.2%
Analysis Period (min) 15

Intersection LOS: C
ICU Level of Service E

1/25/2006
Lanes, Volumes, Timings
Existing-PM
5: Melrose Dr & Rancho Santa Fe Rd

Splits and Phases: 5: Melrose Dr & Rancho Santa Fe Rd



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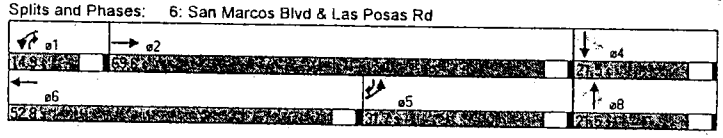
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.731			0.734		
Satd. Flow (perm)	1770	3514	0	1770	3539	1583	1362	1863	1583	1367	1863	1583
Satd. Flow (RTOR)		9				111			52			42
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	250	1149	59	66	1070	107	44	35	50	56	38	412
Adj. Flow (vph)	260	1197	61	69	1115	111	46	36	52	58	40	429
Lane Group Flow (vph)	260	1258	0	69	1115	111	46	36	52	58	40	429
Turn Type	Prot			Prot		Perm	Perm		pm+ov	Perm		pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases						6	8		8	4		4
Detector Phases	5	2		1	6	6	8	8	1	4	4	5
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	20.5	20.5	8.5	20.5	20.5	8.5
Total Split (s)	31.7	69.6	0.0	14.9	52.8	52.8	21.5	21.5	14.9	21.5	21.5	31.7
Total Split (%)	29.9%	65.7%	0.0%	14.1%	49.8%	49.8%	20.3%	20.3%	14.1%	20.3%	20.3%	29.9%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead			Lead			Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes			Yes			Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	None	Max	Max	None
Act Effct Green (s)	27.7	69.3		9.3	48.8	48.8	17.5	17.5	30.8	17.5	17.5	49.2
Actuated g/C Ratio	0.26	0.65		0.09	0.46	0.46	0.17	0.17	0.29	0.17	0.17	0.46
v/c Ratio	0.56	0.55		0.45	0.68	0.14	0.20	0.12	0.10	0.26	0.13	0.57
Control Delay	30.7	7.3		41.0	22.9	5.3	41.0	38.9	8.1	42.1	39.1	22.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	7.3		41.0	22.9	5.3	41.0	38.9	8.1	42.1	39.1	22.0
LOS	C	A		D	C	A	D	D	A	D	D	C
Approach Delay		11.3			22.4			27.7			25.5	
Approach LOS		B			C			C			C	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 100 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 18.2 Intersection LOS: B
Intersection Capacity Utilization 68.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: San Marcos Blvd & Las Posas Rd



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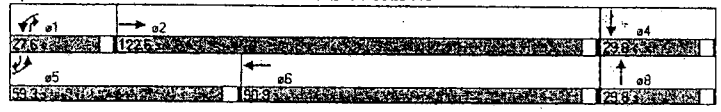
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.734			0.728		
Satd. Flow (perm)	1770	3522	0	1770	3539	1583	1367	1863	1583	1356	1863	1583
Satd. Flow (RTOR)		4				41			48			45
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	288	1362	48	64	1067	54	41	41	45	57	33	256
Adj. Flow (vph)	310	1465	52	69	1147	58	44	44	48	61	35	275
Lane Group Flow (vph)	310	1517	0	69	1147	58	44	44	48	61	35	275
Turn Type	Prot			Prot		Perm	Perm		pm+ov	Perm		pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases						6	8		8	4		4
Detector Phases	5	2		1	6	6	8	8	1	4	4	5
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	20.5	20.5	8.5	20.5	20.5	8.5
Total Split (s)	59.3	122.6	0.0	27.6	90.9	90.9	29.8	29.8	27.6	29.8	29.8	59.3
Total Split (%)	32.9%	68.1%	0.0%	15.3%	50.5%	50.5%	16.6%	16.6%	15.3%	16.6%	16.6%	32.9%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes			Yes			Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	None	Max	Max	None
Act Effct Green (s)	42.5	129.6		12.6	99.7	99.7	25.8	25.8	42.4	25.8	25.8	72.3
Actuated g/C Ratio	0.24	0.72		0.07	0.55	0.55	0.14	0.14	0.24	0.14	0.14	0.40
v/c Ratio	0.74	0.60		0.56	0.59	0.06	0.22	0.16	0.12	0.31	0.13	0.41
Control Delay	58.7	13.9		93.5	17.1	3.3	71.7	69.5	12.4	74.2	68.9	32.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	13.9		93.5	17.1	3.3	71.7	69.5	12.4	74.2	68.9	32.6
LOS	E	B		F	B	A	E	E	B	E	E	C
Approach Delay		21.5			20.6			50.1			42.9	
Approach LOS		C			C			D			D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 157 (87%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 24.5 Intersection LOS: C
Intersection Capacity Utilization 65.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: San Marcos Blvd & Las Posas Rd

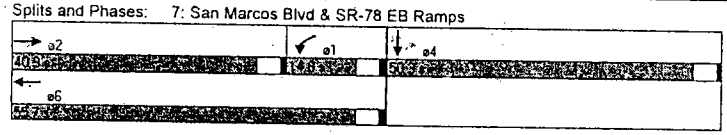


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱	↰↰	↑↑↑					↰	↓	↱
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.950	
Satd. Flow (prot)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			929									4
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	764	892	177	1853	0	0	0	0	252	0	421
Adj. Flow (vph)	0	796	929	184	1930	0	0	0	0	262	0	439
Lane Group Flow (vph)	0	796	929	184	1930	0	0	0	0	131	131	439
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phases		2	2	1	6					4	4	4
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	20.5
Total Split (s)	0.0	40.9	40.9	14.8	55.7	0.0	0.0	0.0	0.0	50.3	50.3	50.3
Total Split (%)	0.0%	38.6%	38.6%	14.0%	52.5%	0.0%	0.0%	0.0%	0.0%	47.5%	47.5%	47.5%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					Max	Max	Max
Act Effct Green (s)		36.9	36.9	10.8	51.7					46.3	46.3	46.3
Actuated g/C Ratio		0.35	0.35	0.10	0.49					0.44	0.44	0.44
v/c Ratio		0.45	0.59	0.53	0.78					0.18	0.18	0.63
Control Delay		24.4	9.0	41.7	18.4					19.1	19.1	28.1
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		24.4	9.0	41.7	18.4					19.1	19.1	28.1
LOS		C	A	D	B					B	B	C
Approach Delay		16.1			20.4						24.7	
Approach LOS		B			C						C	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 45 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 19.4 Intersection LOS: B
Intersection Capacity Utilization 68.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 7: San Marcos Blvd & SR-78 EB Ramps



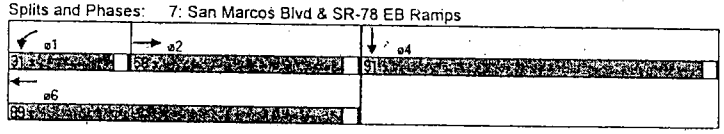
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱	↰↰	↑↑↑					↰	↓	↱
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.950	
Satd. Flow (prot)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			711									20
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	1213	1005	317	1348	0	0	0	0	366	0	533
Adj. Flow (vph)	0	1251	1036	327	1390	0	0	0	0	377	0	549
Lane Group Flow (vph)	0	1251	1036	327	1390	0	0	0	0	189	188	549
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phases		2	2	1	6					4	4	4
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	20.5
Total Split (s)	0.0	58.0	58.0	31.0	89.0	0.0	0.0	0.0	0.0	91.0	91.0	91.0
Total Split (%)	0.0%	32.2%	32.2%	17.2%	49.4%	0.0%	0.0%	0.0%	0.0%	50.6%	50.6%	50.6%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					Max	Max	Max
Act Effct Green (s)		58.6	58.6	22.4	85.0					87.0	87.0	87.0
Actuated g/C Ratio		0.33	0.33	0.12	0.47					0.48	0.48	0.48
v/c Ratio		0.76	0.75	0.76	0.58					0.23	0.23	0.71
Control Delay		45.1	8.9	79.7	26.0					28.0	28.0	41.2
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		45.1	8.9	79.7	26.0					28.0	28.0	41.2
LOS		D	A	E	C					C	C	D
Approach Delay		28.7			36.2						35.9	
Approach LOS		C			D						D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 78 (43%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 32.7 Intersection LOS: C
Intersection Capacity Utilization 65.7% ICU Level of Service C
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Existing-PM
7: San Marcos Blvd & SR-78 EB Ramps

Splits and Phases: 7: San Marcos Blvd & SR-78 EB Ramps



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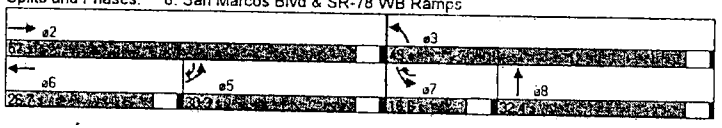
J. Bavos/V Haskell
Darnell & Associates, Inc.
040912-Lago De San Marcos

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.95	0.95	1.00	1.00	0.88
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	0	5085	1583	3433	3479	0	1770	0	2787
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	0	5085	1583	3433	3479	0	1770	0	2787
Satd. Flow (RTOR)			208			109		13				28
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	398	466	183	0	745	103	1072	393	52	88	0	507
Adj. Flow (vph)	452	530	208	0	847	117	1218	447	59	100	0	576
Lane Group Flow (vph)	452	530	208	0	847	117	1218	506	0	100	0	576
Turn Type	Prot		Free			pm+ov	Prot			Prot		Over
Protected Phases	5	2			6	7	3	8		7		5
Permitted Phases			Free			6						
Detector Phases	5	2			6	7	3	8		7		5
Minimum Initial (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0		4.0
Minimum Split (s)	8.5	20.5			20.5	8.5	8.5	20.5		8.5		8.5
Total Split (s)	30.3	57.0	0.0	0.0	26.7	16.6	49.0	32.4	0.0	16.6	0.0	30.3
Total Split (%)	28.6%	53.8%	0.0%	0.0%	25.2%	15.7%	46.2%	30.6%	0.0%	15.7%	0.0%	28.6%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5		3.5		3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0		1.0		1.0
Lead/Lag	Lag				Lead	Lead		Lag		Lead		Lag
Lead-Lag Optimize?	Yes				Yes	Yes		Yes		Yes		Yes
Recall Mode	None	C-Max			C-Max	None	None	Max		None		None
Act Effct Green (s)	26.3	53.0	106.0		22.7	33.5	45.0	30.2		10.8		26.3
Actuated g/C Ratio	0.25	0.50	1.00		0.21	0.32	0.42	0.28		0.10		0.25
v/c Ratio	0.53	0.30	0.13		0.78	0.20	0.84	0.51		0.55		0.81
Control Delay	22.7	7.4	0.2		45.0	3.7	33.5	33.4		56.7		45.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	22.7	7.4	0.2		45.0	3.7	33.5	33.4		56.7		45.8
LOS	C	A	A		D	A	C	C		E		D
Approach Delay		12.0			40.0			33.5				
Approach LOS		B			D			C				

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 52 (49%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 31.3 Intersection LOS: C
Intersection Capacity Utilization 72.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 8: San Marcos Blvd & SR-78 WB Ramps

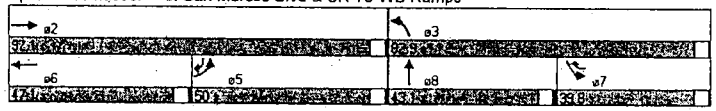


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.95	0.95	1.00	1.00	0.88
Frt			0.850			0.850		0.972				0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	0	5085	1583	3433	3440	0	1770	0	2787
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	0	5085	1583	3433	3440	0	1770	0	2787
Satd. Flow (RTOR)			92			76		14				111
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	418	1004	222	0	686	73	797	288	65	165	0	497
Adj. Flow (vph)	435	1046	231	0	715	76	830	300	68	172	0	518
Lane Group Flow (vph)	435	1046	231	0	715	76	830	368	0	172	0	518
Turn Type	Prot		Free			pm+ov	Prot			Prot		Over
Protected Phases	5	2			6	7	3	8		7		5
Permitted Phases			Free			6						
Detector Phases	5	2			6	7	3	8		7		5
Minimum Initial (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0		4.0
Minimum Split (s)	8.5	20.5			20.5	8.5	8.5	20.5		8.5		8.5
Total Split (s)	50.0	97.1	0.0	0.0	47.1	39.8	82.9	43.1	0.0	39.8	0.0	50.0
Total Split (%)	27.8%	53.9%	0.0%	0.0%	26.2%	22.1%	46.1%	23.9%	0.0%	22.1%	0.0%	27.8%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5		3.5		3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0		1.0		1.0
Lead/Lag	Lag				Lead	Lag		Lead		Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes		Yes		Yes		Yes
Recall Mode	None	C-Max			C-Max	None	None	Max		None		None
Act Effct Green (s)	46.0	106.3	180.0		56.3	82.9	65.7	39.1		22.6		46.0
Actuated g/C Ratio	0.26	0.59	1.00		0.31	0.46	0.36	0.22		0.13		0.26
v/c Ratio	0.50	0.50	0.15		0.45	0.10	0.66	0.49		0.77		0.65
Control Delay	28.7	5.1	0.2		51.4	5.2	50.3	61.7		98.1		50.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.3	0.0		0.0		0.0
Total Delay	28.7	5.1	0.2		51.4	5.2	50.6	61.7		98.1		50.8
LOS	C	A	A		D	A	D	E		F		D
Approach Delay		10.4			46.9			54.0				
Approach LOS		B			D			D				

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 86 (48%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 37.1 Intersection LOS: D
Intersection Capacity Utilization 63.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 8: San Marcos Blvd & SR-78 WB Ramps



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	14	207	241	0	1	39
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	15	227	265	0	1	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		418				
pX, platoon unblocked						
vC, conflicting volume	265				409	132
vC1, stage 1 conf vol	0					
vC2, stage 2 conf vol	0					
vCu, unblocked vol	265				409	132
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)	3.1					
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	95
cM capacity (veh/h)	992				561	892

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	91	152	177	88	44
Volume Left	15	0	0	0	1
Volume Right	0	0	0	0	43
cSH	992	1700	1700	1700	879
Volume to Capacity	0.02	0.09	0.10	0.05	0.05
Queue Length 95th (ft)	1	0	0	0	4
Control Delay (s)	1.6	0.0	0.0	0.0	9.3
Lane LOS	A				A
Approach Delay (s)	0.6		0.0		9.3
Approach LOS					A

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	26.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	28	253	140	2	1	9
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	30	272	151	2	1	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		417				
pX, platoon unblocked						
vC, conflicting volume	153				348	76
vC1, stage 1 conf vol	0					
vC2, stage 2 conf vol	0					
vCu, unblocked vol	153				348	76
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)	3.1					
tF (s)	2.2				3.5	3.3
p0 queue free %	97				100	99
cM capacity (veh/h)	1036				605	969

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	121	181	100	52	11
Volume Left	30	0	0	0	1
Volume Right	0	0	0	2	10
cSH	1036	1700	1700	1700	914
Volume to Capacity	0.03	0.11	0.06	0.03	0.01
Queue Length 95th (ft)	2	0	0	0	1
Control Delay (s)	2.3	0.0	0.0	0.0	9.0
Lane LOS	A				A
Approach Delay (s)	0.9		0.0		9.0
Approach LOS					A

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	157	50	37	46	81	182
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	169	54	40	49	87	196
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	314	185	283			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	314	185	283			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	94	97			
cM capacity (veh/h)	658	857	1280			

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	169	54	89	283
Volume Left	169	0	40	0
Volume Right	0	54	0	196
cSH	658	857	1280	1700
Volume to Capacity	0.26	0.06	0.03	0.17
Queue Length 95th (ft)	25	5	2	0
Control Delay (s)	12.4	9.5	3.7	0.0
Lane LOS	B	A	A	
Approach Delay (s)	11.7		3.7	0.0
Approach LOS	B			

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	183	49	46	62	59	101
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	206	55	52	70	66	113
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	296	123	180			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	296	123	180			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	94	96			
cM capacity (veh/h)	669	928	1396			

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	206	55	121	180
Volume Left	206	0	52	0
Volume Right	0	55	0	113
cSH	669	928	1396	1700
Volume to Capacity	0.31	0.06	0.04	0.11
Queue Length 95th (ft)	33	5	3	0
Control Delay (s)	12.7	9.1	3.4	0.0
Lane LOS	B	A	A	
Approach Delay (s)	12.0		3.4	0.0
Approach LOS	B			

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	157	50	37	46	81	182
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	169	54	40	49	87	196

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	169	54	89	283
Volume Left (vph)	169	0	40	0
Volume Right (vph)	0	54	0	196
Hadj (s)	0.53	-0.67	0.12	-0.38
Departure Headway (s)	5.9	4.7	5.0	4.3
Degree Utilization, x	0.28	0.07	0.12	0.33
Capacity (veh/h)	579	721	683	806
Control Delay (s)	9.9	6.8	8.7	9.4
Approach Delay (s)	9.2		8.7	9.4
Approach LOS	A		A	A

Intersection Summary			
Delay	9.2		
HCM Level of Service	A		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	183	49	46	62	59	101
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	206	55	52	70	66	113

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	206	55	121	180
Volume Left (vph)	206	0	52	0
Volume Right (vph)	0	55	0	113
Hadj (s)	0.53	-0.67	0.12	-0.34
Departure Headway (s)	5.8	4.6	5.0	4.4
Degree Utilization, x	0.33	0.07	0.17	0.22
Capacity (veh/h)	597	750	687	765
Control Delay (s)	10.3	6.7	8.9	8.7
Approach Delay (s)	9.6		8.9	8.7
Approach LOS	A		A	A

Intersection Summary			
Delay	9.2		
HCM Level of Service	A		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX D

- Existing + Project Conditions Analysis Worksheets

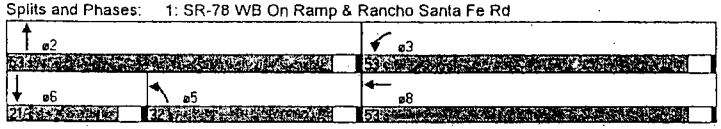
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt					0.851							0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	1585	0	1770	3539	0	0	3539	1583
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1770	1585	0	1770	3539	0	0	3539	1583
Satd. Flow (RTOR)					134							307
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	0	0	790	1	239	427	692	0	0	476	289
Adj. Flow (vph)	0	0	0	840	1	254	454	736	0	0	506	307
Lane Group Flow (vph)	0	0	0	840	255	0	454	736	0	0	506	307
Turn Type				Prot			Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases												6
Detector Phases				3	8		5	2			6	6
Minimum Initial (s)				4.0	4.0		4.0	4.0			4.0	4.0
Minimum Split (s)				8.5	20.5		8.5	20.5			20.5	20.5
Total Split (s)	0.0	0.0	0.0	53.0	53.0	0.0	32.0	53.0	0.0	0.0	21.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	30.2%	50.0%	0.0%	0.0%	19.8%	19.8%
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Act Effct Green (s)				49.0	49.0		28.0	49.0			17.0	17.0
Actuated g/C Ratio				0.46	0.46		0.26	0.46			0.16	0.16
v/c Ratio				1.03	0.32		0.97	0.45			0.89	0.60
Control Delay				67.9	9.3		68.3	17.0			63.0	10.0
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0
Total Delay				67.9	9.3		68.3	17.0			63.0	10.0
LOS				E	A		E	B			E	B
Approach Delay					54.3			36.6			43.0	
Approach LOS					D			D			D	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 93 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 44.5 Intersection LOS: D
Intersection Capacity Utilization 95.3% ICU Level of Service F
Analysis Period (min) 15

1/25/2006 Existing + Project-AM
Lanes, Volumes, Timings 1: SR-78 WB On Ramp & Rancho Santa Fe Rd

Splits and Phases: 1: SR-78 WB On Ramp & Rancho Santa Fe Rd



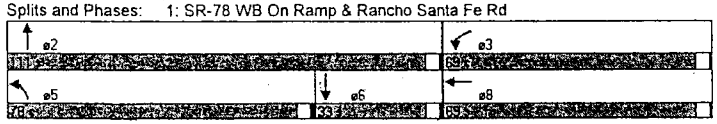
Y:\040912-Lago De San Marcos (STD)\Analysis\Synchro\01-25-06\Ex + Proj AM.sy7
J. Bavos/V Haskell 040912-Lago De San Marcos
Darnell & Associates, Inc.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt					0.850							0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	1583	0	1770	3539	0	0	3539	1583
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1770	1583	0	1770	3539	0	0	3539	1583
Satd. Flow (RTOR)					216							430
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	0	0	451	0	243	709	693	0	0	438	404
Adj. Flow (vph)	0	0	0	480	0	259	754	737	0	0	466	430
Lane Group Flow (vph)	0	0	0	480	259	0	754	737	0	0	466	430
Turn Type				Prot			Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases												6
Detector Phases				3	8		5	2			6	6
Minimum Initial (s)				4.0	4.0		4.0	4.0			4.0	4.0
Minimum Split (s)				8.5	20.5		8.5	20.5			20.5	20.5
Total Split (s)	0.0	0.0	0.0	69.0	69.0	0.0	78.0	111.0	0.0	0.0	33.0	33.0
Total Split (%)	0.0%	0.0%	0.0%	38.3%	38.3%	0.0%	43.3%	61.7%	0.0%	0.0%	18.3%	18.3%
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Act Effct Green (s)				52.5	52.5		82.2	119.5			33.3	33.3
Actuated g/C Ratio				0.29	0.29		0.46	0.66			0.18	0.18
v/c Ratio				0.93	0.42		0.93	0.31			0.71	0.67
Control Delay				86.8	10.8		49.6	1.7			76.5	10.8
Queue Delay				0.0	0.0		0.0	0.2			0.0	0.0
Total Delay				86.8	10.8		49.6	1.9			76.5	10.8
LOS				F	B		D	A			E	B
Approach Delay					60.2			26.0			45.0	
Approach LOS					E			C			D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 96 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 39.5 Intersection LOS: D
Intersection Capacity Utilization 99.3% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: SR-78 WB On Ramp & Rancho Santa Fe Rd



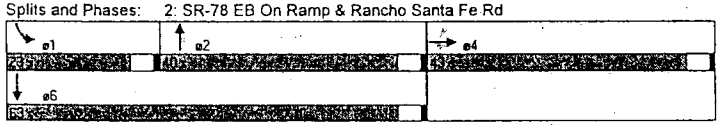
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected		0.950								0.950		
Satd. Flow (prot)	0	1770	2787	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted		0.950								0.950		
Satd. Flow (perm)	0	1770	2787	0	0	0	0	3539	1583	1770	3539	0
Satd. Flow (RTOR)			56						544			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	301	0	711	0	0	0	0	659	490	167	1309	0
Adj. Flow (vph)	334	0	790	0	0	0	0	732	544	186	1454	0
Lane Group Flow (vph)	0	334	790	0	0	0	0	732	544	186	1454	0
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phases	4	4	4					2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	20.5					20.5	20.5	8.5	20.5	
Total Split (s)	43.0	43.0	43.0	0.0	0.0	0.0	0.0	40.0	40.0	23.0	63.0	0.0
Total Split (%)	40.6%	40.6%	40.6%	0.0%	0.0%	0.0%	0.0%	37.7%	37.7%	21.7%	59.4%	0.0%
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effct Green (s)		34.0	34.0					44.4	44.4	15.6	64.0	
Actuated g/C Ratio		0.32	0.32					0.42	0.42	0.15	0.60	
v/c Ratio		0.59	0.85					0.49	0.56	0.72	0.68	
Control Delay		33.9	40.1					11.0	2.6	56.4	4.7	
Queue Delay		0.0	0.0					0.0	0.0	0.0	0.2	
Total Delay		33.9	40.1					11.0	2.6	56.4	4.9	
LOS		C	D					B	A	E	A	
Approach Delay		38.2						7.4			10.8	
Approach LOS		D						A			B	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 89 (84%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 17.4 Intersection LOS: B
Intersection Capacity Utilization 95.3% ICU Level of Service F
Analysis Period (min) 15

1/25/2006 Existing + Project-AM
Lanes, Volumes, Timings 2: SR-78 EB On Ramp & Rancho Santa Fe Rd

Splits and Phases: 2: SR-78 EB On Ramp & Rancho Santa Fe Rd



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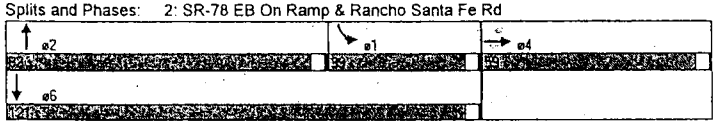
J. Bavos/V Haskell 040912-Lago De San Marcos
Darnell & Associates, Inc.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	2787	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	2787	0	0	0	0	3539	1583	1770	3539	0
Satd. Flow (RTOR)			424						463			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	384	2	516	0	0	0	0	1068	670	220	698	0
Adj. Flow (vph)	400	2	538	0	0	0	0	1112	698	229	727	0
Lane Group Flow (vph)	0	402	538	0	0	0	0	1112	698	229	727	0
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phases	4	4	4					2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	20.5					20.5	20.5	8.5	20.5	
Total Split (s)	59.0	59.0	59.0	0.0	0.0	0.0	0.0	82.0	82.0	39.0	121.0	0.0
Total Split (%)	32.8%	32.8%	32.8%	0.0%	0.0%	0.0%	0.0%	45.6%	45.6%	21.7%	67.2%	0.0%
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effct Green (s)		46.0	46.0					87.0	87.0	35.0	126.0	
Actuated g/C Ratio		0.26	0.26					0.48	0.48	0.19	0.70	
v/c Ratio		0.89	0.52					0.65	0.70	0.67	0.29	
Control Delay		85.6	12.8					3.9	5.1	66.6	17.8	
Queue Delay		0.8	0.0					0.0	0.0	0.0	0.4	
Total Delay		86.4	12.8					3.9	5.1	66.6	18.2	
LOS		F	B					A	A	E	B	
Approach Delay		44.3						4.3			29.8	
Approach LOS		D						A			C	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 34 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 21.0 Intersection LOS: C
Intersection Capacity Utilization 99.3% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 2: SR-78 EB On Ramp & Rancho Santa Fe Rd



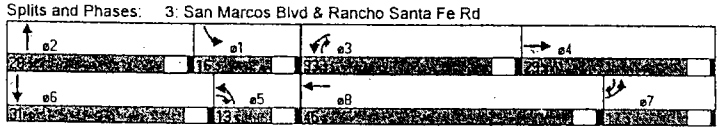
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.995				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3522	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3522	0	3433	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			57		4				121			36
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	285	706	52	422	1033	34	140	469	627	86	674	430
Adj. Flow (vph)	310	767	57	459	1123	37	152	510	682	93	733	467
Lane Group Flow (vph)	310	767	57	459	1160	0	152	510	682	93	733	467
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6
Detector Phases	7	4	5	3	8		5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5	8.5	8.5	20.5		8.5	20.5	8.5	8.5	20.5	8.5
Total Split (s)	17.0	29.0	13.0	33.0	45.0	0.0	13.0	28.0	33.0	16.0	31.0	17.0
Total Split (%)	16.0%	27.4%	12.3%	31.1%	42.5%	0.0%	12.3%	26.4%	31.1%	15.1%	29.2%	16.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	Max	C-Max	None
Act Effct Green (s)	14.8	29.9	38.9	23.9	38.9		9.0	24.2	48.1	12.0	27.2	46.1
Actuated g/C Ratio	0.14	0.28	0.37	0.23	0.37		0.08	0.23	0.45	0.11	0.26	0.43
v/c Ratio	0.65	0.77	0.09	0.59	0.90		0.52	0.63	0.87	0.46	0.81	0.66
Control Delay	50.8	42.4	3.8	24.6	33.6		42.1	30.1	32.6	49.7	41.9	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	42.4	3.8	24.6	33.6		42.1	30.1	32.6	49.7	41.9	25.6
LOS	D	D	A	C	C		D	C	C	D	D	C
Approach Delay		42.7			31.1			32.7			36.6	
Approach LOS		D			C			C			D	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 50 (47%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 35.3 Intersection LOS: D
Intersection Capacity Utilization 73.7% ICU Level of Service D
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Existing + Project-AM
3: San Marcos Blvd & Rancho Santa Fe Rd

Splits and Phases: 3: San Marcos Blvd & Rancho Santa Fe Rd



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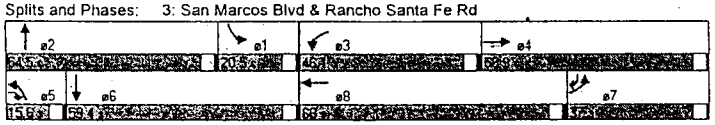
J. Bavos/V Haskell
Darnell & Associates, Inc.
040912-Lago De San Marcos

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.993				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3514	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3514	0	3433	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			75		3				89			17
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	735	703	77	500	1360	65	126	1071	163	141	544	601
Adj. Flow (vph)	742	710	78	505	1374	66	127	1082	165	142	549	607
Lane Group Flow (vph)	742	710	78	505	1440	0	127	1082	165	142	549	607
Turn Type	Prot		pm+ov	Prot			Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4						2			6
Detector Phases	7	4	5	3	8		5	2	2	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5	8.5	8.5	20.5		8.5	20.5	20.5	20.5	20.5	8.5
Total Split (s)	37.0	58.9	15.6	46.1	68.0	0.0	15.6	54.5	54.5	20.5	59.4	37.0
Total Split (%)	20.6%	32.7%	8.7%	25.6%	37.8%	0.0%	8.7%	30.3%	30.3%	11.4%	33.0%	20.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	Max	C-Max	None
Act Effct Green (s)	33.0	65.7	80.7	31.3	64.0		11.0	50.5	50.5	16.5	56.0	89.0
Actuated g/C Ratio	0.18	0.36	0.45	0.17	0.36		0.06	0.28	0.28	0.09	0.31	0.49
v/c Ratio	1.18	0.55	0.10	0.85	1.15		0.61	1.09	0.32	0.88	0.50	0.77
Control Delay	156.8	48.2	6.8	75.8	130.1		92.4	104.6	24.2	112.7	44.1	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	156.8	48.2	6.8	75.8	130.1		92.4	104.6	24.2	112.7	44.1	27.7
LOS	F	D	A	E	F		F	F	C	F	D	C
Approach Delay		98.8			116.0			93.8			43.9	
Approach LOS		F			F			F			D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 90 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 91.5 Intersection LOS: F
Intersection Capacity Utilization 111.4% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 3: San Marcos Blvd & Rancho Santa Fe Rd



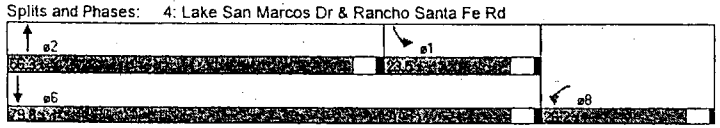
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.989			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3500	0	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3500	0	1770	3539
Satd. Flow (RTOR)		250	11			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	72	235	1007	78	139	1091
Adj. Flow (vph)	77	250	1071	83	148	1161
Lane Group Flow (vph)	77	250	1154	0	148	1161
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.5	20.5	20.5		8.5	20.5
Total Split (s)	26.2	26.2	56.3	0.0	23.5	79.8
Total Split (%)	24.7%	24.7%	53.1%	0.0%	22.2%	75.3%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max
Act Effct Green (s)	10.4	10.4	64.1		19.5	87.6
Actuated g/C Ratio	0.10	0.10	0.60		0.18	0.83
v/c Ratio	0.45	0.66	0.54		0.45	0.40
Control Delay	52.3	14.3	13.8		29.4	1.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	52.3	14.3	13.8		29.4	1.0
LOS	D	B	B		C	A
Approach Delay	23.3		13.8			4.2
Approach LOS	C		B			A

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 91 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 10.4 Intersection LOS: B
Intersection Capacity Utilization 52.0% ICU Level of Service A
Analysis Period (min) 15

1/25/2006 Existing + Project-AM
Lanes, Volumes, Timings 4: Lake San Marcos Dr & Rancho Santa Fe Rd

Splits and Phases: 4: Lake San Marcos Dr & Rancho Santa Fe Rd



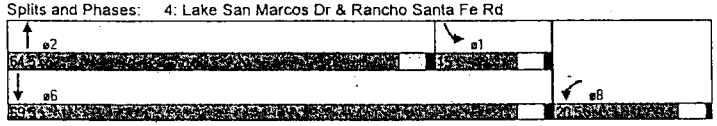
Y:\040912-Lago De San Marcos (STD)\Analysis\Synchro\01-25-06\Ex + Proj AM.sy7
J. Bavos/V Haskell 040912-Lago De San Marcos
Darnell & Associates, Inc.

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.985			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3486	0	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3486	0	1770	3539
Satd. Flow (RTOR)		92	21			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	73	88	1304	140	147	978
Adj. Flow (vph)	76	92	1358	146	153	1019
Lane Group Flow (vph)	76	92	1504	0	153	1019
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.5	20.5	20.5		8.5	20.5
Total Split (s)	20.5	20.5	54.5	0.0	15.0	69.5
Total Split (%)	22.8%	22.8%	60.6%	0.0%	16.7%	77.2%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max
Act Effct Green (s)	9.5	9.5	59.5		11.0	75.3
Actuated g/C Ratio	0.11	0.11	0.66		0.12	0.84
v/c Ratio	0.40	0.37	0.65		0.71	0.34
Control Delay	43.2	12.5	11.6		46.3	0.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	43.2	12.5	11.6		46.3	0.8
LOS	D	B	B		D	A
Approach Delay	26.4		11.6			6.8
Approach LOS	C		B			A

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 19 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 10.5 Intersection LOS: B
Intersection Capacity Utilization 62.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Lake San Marcos Dr & Rancho Santa Fe Rd

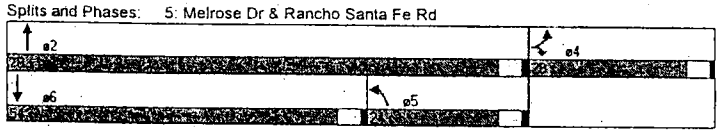


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	1863	1583
Satd. Flow (RTOR)		361				1
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	273	411	430	806	929	1
Adj. Flow (vph)	281	424	443	831	958	1
Lane Group Flow (vph)	281	424	443	831	958	1
Turn Type		Prot	Prot			Perm
Protected Phases	4	4	5	2	6	
Permitted Phases						6
Detector Phases	4	4	5	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	20.5
Total Split (s)	28.0	28.0	24.0	78.0	54.0	54.0
Total Split (%)	26.4%	26.4%	22.6%	73.6%	50.9%	50.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	20.6	20.6	20.0	74.1	50.1	50.1
Actuated g/C Ratio	0.20	0.20	0.19	0.72	0.49	0.49
v/c Ratio	0.79	0.70	1.28	0.33	1.06	0.00
Control Delay	55.7	13.7	183.7	6.0	73.2	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	13.7	183.7	6.0	73.2	11.0
LOS	E	B	F	A	E	B
Approach Delay	30.4			67.8	73.1	
Approach LOS	C			E	E	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 102.7
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.28
Intersection Signal Delay: 60.5 Intersection LOS: E
Intersection Capacity Utilization 97.8% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 5: Melrose Dr & Rancho Santa Fe Rd

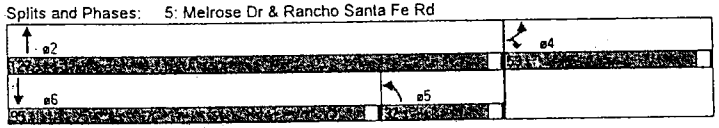


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	1863	1583
Satd. Flow (RTOR)		346				113
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	267	483	259	975	820	208
Adj. Flow (vph)	275	498	267	1005	845	214
Lane Group Flow (vph)	275	498	267	1005	845	214
Turn Type		Prot	Prot			Perm
Protected Phases	4	4	5	2	6	
Permitted Phases						6
Detector Phases	4	4	5	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	20.5
Total Split (s)	53.0	53.0	32.0	127.0	95.0	95.0
Total Split (%)	29.4%	29.4%	17.8%	70.6%	52.8%	52.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	32.3	32.3	28.1	123.3	91.3	91.3
Actuated g/C Ratio	0.20	0.20	0.17	0.75	0.56	0.56
v/c Ratio	0.79	0.84	0.88	0.38	0.81	0.23
Control Delay	78.2	32.2	94.6	8.2	38.5	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.2	32.2	94.6	8.2	38.5	10.0
LOS	E	C	F	A	D	A
Approach Delay	48.5			26.4	32.7	
Approach LOS	D			C	C	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 163.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 34.1
Intersection LOS: C
Intersection Capacity Utilization 82.3%
ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 5: Melrose Dr & Rancho Santa Fe Rd



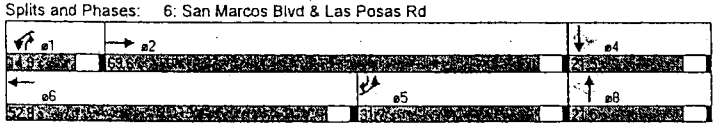
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.731			0.734		
Satd. Flow (perm)	1770	3514	0	1770	3539	1583	1362	1863	1583	1367	1863	1583
Satd. Flow (RTOR)		9				111			52			42
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	251	1150	59	66	1071	107	44	35	50	56	38	412
Adj. Flow (vph)	261	1198	61	69	1116	111	46	36	52	58	40	429
Lane Group Flow (vph)	261	1259	0	69	1116	111	46	36	52	58	40	429
Turn Type	Prot			Prot		Perm	Perm		pm+ov	Perm		pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases						6	8		8	4		4
Detector Phases	5	2		1	6	6	8	8	1	4	4	5
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	20.5	20.5	8.5	20.5	20.5	8.5
Total Split (s)	31.7	69.6	0.0	14.9	52.8	52.8	21.5	21.5	14.9	21.5	21.5	31.7
Total Split (%)	29.9%	65.7%	0.0%	14.1%	49.8%	49.8%	20.3%	20.3%	14.1%	20.3%	20.3%	29.9%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead			Lead			Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes			Yes			Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	None	Max	Max	None
Act Effct Green (s)	27.7	69.3		9.3	48.8	48.8	17.5	17.5	30.8	17.5	17.5	49.2
Actuated g/C Ratio	0.26	0.65		0.09	0.46	0.46	0.17	0.17	0.29	0.17	0.17	0.46
v/c Ratio	0.56	0.55		0.45	0.69	0.14	0.20	0.12	0.10	0.26	0.13	0.57
Control Delay	30.7	7.3		41.0	22.9	5.3	41.0	38.9	8.1	42.1	39.1	22.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	7.3		41.0	22.9	5.3	41.0	38.9	8.1	42.1	39.1	22.0
LOS	C	A		D	C	A	D	D	A	D	D	C
Approach Delay		11.3			22.4			27.7			25.5	
Approach LOS		B			C			C			C	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 100 (94%). Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 18.2 Intersection LOS: B
Intersection Capacity Utilization 68.4% ICU Level of Service C
Analysis Period (min) 15

1/25/2006 Existing + Project-AM
Lanes, Volumes, Timings 6: San Marcos Blvd & Las Posas Rd

Splits and Phases: 6: San Marcos Blvd & Las Posas Rd



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J. Bavos/V Haskell 040912-Lago De San Marcos
Darnell & Associates, Inc.

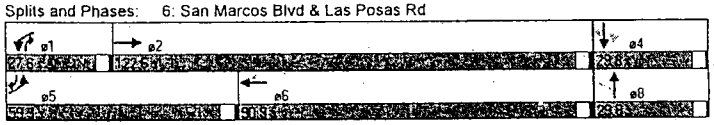
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.734			0.728		
Satd. Flow (perm)	1770	3522	0	1770	3539	1583	1367	1863	1583	1356	1863	1583
Satd. Flow (RTOR)		4				41			48			45
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	288	1363	48	64	1068	54	41	41	45	57	33	257
Adj. Flow (vph)	310	1466	52	69	1148	58	44	44	48	61	35	276
Lane Group Flow (vph)	310	1518	0	69	1148	58	44	44	48	61	35	276
Turn Type	Prot			Prot		Perm	Perm		pm+ov	Perm		pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases						6	8		8	4		4
Detector Phases	5	2		1	6	6	8	8	1	4	4	5
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	20.5	20.5	8.5	20.5	20.5	8.5
Total Split (s)	59.3	122.6	0.0	27.6	90.9	90.9	29.8	29.8	27.6	29.8	29.8	59.3
Total Split (%)	32.9%	68.1%	0.0%	15.3%	50.5%	50.5%	16.6%	16.6%	15.3%	16.6%	16.6%	32.9%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes			Yes			Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	None	Max	Max	None
Act Effct Green (s)	42.6	129.6		12.6	99.6	99.6	25.8	25.8	42.4	25.8	25.8	72.4
Actuated g/C Ratio	0.24	0.72		0.07	0.55	0.55	0.14	0.14	0.24	0.14	0.14	0.40
v/c Ratio	0.74	0.60		0.56	0.59	0.06	0.22	0.16	0.12	0.31	0.13	0.42
Control Delay	58.6	13.9		93.5	17.1	3.3	71.7	69.5	12.4	74.2	68.9	32.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.6	13.9		93.5	17.1	3.3	71.7	69.5	12.4	74.2	68.9	32.6
LOS	E	B		F	B	A	E	E	B	E	E	C
Approach Delay		21.5			20.6			50.1			42.9	
Approach LOS		C			C			D			D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 157 (87%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 24.5 — Intersection LOS: C
Intersection Capacity Utilization 65.3% — ICU Level of Service C
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Existing + Project - PM
6: San Marcos Blvd & Las Posas Rd

Splits and Phases: 6: San Marcos Blvd & Las Posas Rd



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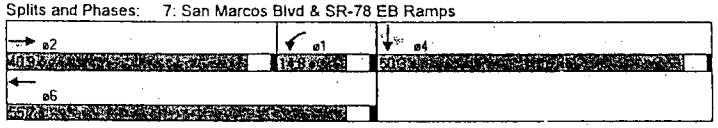
J. Bavos/V Haskell
Darnell & Associates, Inc.
040912-Lago De San Marcos

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑							
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.950	
Satd. Flow (prot)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			929									4
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	765	892	177	1854	0	0	0	0	252	0	421
Adj. Flow (vph)	0	797	929	184	1931	0	0	0	0	262	0	439
Lane Group Flow (vph)	0	797	929	184	1931	0	0	0	0	131	131	439
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phases		2	2	1	6					4	4	4
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	20.5
Total Split (s)	0.0	40.9	40.9	14.8	55.7	0.0	0.0	0.0	0.0	50.3	50.3	50.3
Total Split (%)	0.0%	38.6%	38.6%	14.0%	52.5%	0.0%	0.0%	0.0%	0.0%	47.5%	47.5%	47.5%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					Max	Max	Max
Act Effct Green (s)		36.9	36.9	10.8	51.7					46.3	46.3	46.3
Actuated g/C Ratio		0.35	0.35	0.10	0.49					0.44	0.44	0.44
v/c Ratio		0.45	0.59	0.53	0.78					0.18	0.18	0.63
Control Delay		24.4	9.0	41.7	18.4					19.1	19.1	28.1
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		24.4	9.0	41.7	18.4					19.1	19.1	28.1
LOS		C	A	D	B					B	B	C
Approach Delay		16.1			20.4						24.7	
Approach LOS		B			C						C	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 45 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 19.4 Intersection LOS: B
Intersection Capacity Utilization 68.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 7: San Marcos Blvd & SR-78 EB Ramps

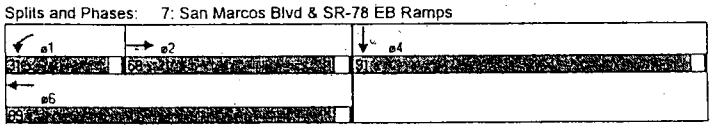


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱	↰↰	↑↑↑					↰	↑	↱
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.950	
Satd. Flow (prot)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			712									20
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	1213	1006	317	1349	0	0	0	0	366	0	533
Adj. Flow (vph)	0	1251	1037	327	1391	0	0	0	0	377	0	549
Lane Group Flow (vph)	0	1251	1037	327	1391	0	0	0	0	189	188	549
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phases		2	2	1	6					4	4	4
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	20.5
Total Split (s)	0.0	58.0	58.0	31.0	89.0	0.0	0.0	0.0	0.0	91.0	91.0	91.0
Total Split (%)	0.0%	32.2%	32.2%	17.2%	49.4%	0.0%	0.0%	0.0%	0.0%	50.6%	50.6%	50.6%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					Max	Max	Max
Act Effct Green (s)		58.6	58.6	22.4	85.0					87.0	87.0	87.0
Actuated g/C Ratio		0.33	0.33	0.12	0.47					0.48	0.48	0.48
v/c Ratio		0.76	0.75	0.76	0.58					0.23	0.23	0.71
Control Delay		45.1	8.9	79.6	26.0					28.0	28.0	41.2
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		45.1	8.9	79.6	26.0					28.0	28.0	41.2
LOS		D	A	E	C					C	C	D
Approach Delay		28.7			36.2						35.9	
Approach LOS		C			D						D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 78 (43%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 32.7 Intersection LOS: C
Intersection Capacity Utilization 65.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 7: San Marcos Blvd & SR-78 EB Ramps



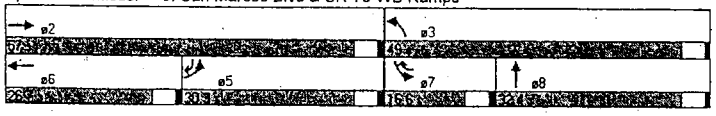
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.95	0.95	1.00	1.00	0.88
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	0	5085	1583	3433	3479	0	1770	0	2787
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	0	5085	1583	3433	3479	0	1770	0	2787
Satd. Flow (RTOR)			208			109		13				28
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	398	467	183	0	745	103	1073	393	52	88	0	507
Adj. Flow (vph)	452	531	208	0	847	117	1219	447	59	100	0	576
Lane Group Flow (vph)	452	531	208	0	847	117	1219	506	0	100	0	576
Turn Type	Prot		Free			pm+ov	Prot			Prot		Over
Protected Phases	5	2			6	7	3	8		7		5
Permitted Phases			Free			6						
Detector Phases	5	2			6	7	3	8		7		5
Minimum Initial (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0		4.0
Minimum Split (s)	8.5	20.5			20.5	8.5	8.5	20.5		8.5		8.5
Total Split (s)	30.3	57.0	0.0	0.0	26.7	16.6	49.0	32.4	0.0	16.6	0.0	30.3
Total Split (%)	28.6%	53.8%	0.0%	0.0%	25.2%	15.7%	46.2%	30.6%	0.0%	15.7%	0.0%	28.6%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5		3.5		3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0		1.0		1.0
Lead/Lag	Lag				Lead	Lead		Lag		Lead		Lag
Lead-Lag Optimize?	Yes				Yes	Yes		Yes		Yes		Yes
Recall Mode	None	C-Max			C-Max	None	None	Max		None		None
Act Effct Green (s)	26.3	53.0	106.0		22.7	33.5	45.0	30.2		10.8		26.3
Actuated g/C Ratio	0.25	0.50	1.00		0.21	0.32	0.42	0.28		0.10		0.25
v/c Ratio	0.53	0.30	0.13		0.78	0.20	0.84	0.51		0.55		0.81
Control Delay	22.7	7.4	0.2		45.0	3.7	33.6	33.4		56.7		45.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	22.7	7.4	0.2		45.0	3.7	33.6	33.4		56.7		45.8
LOS	C	A	A		D	A	C	C		E		D
Approach Delay		11.9			40.0			33.5				
Approach LOS		B			D			C				

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 52 (49%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 31.3 Intersection LOS: C
Intersection Capacity Utilization 72.7% ICU Level of Service C
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Existing + Project-AM
8: San Marcos Blvd & SR-78 WB Ramps

Splits and Phases: 8: San Marcos Blvd & SR-78 WB Ramps



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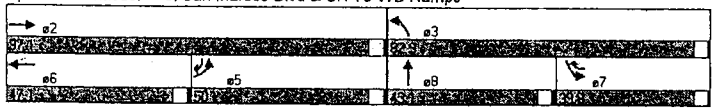
J. Bavos/V Haskell 040912-Lago De San Marcos
Darnell & Associates, Inc.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.95	0.95	1.00	1.00	0.88
Frt			0.850			0.850		0.972				0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	0	5085	1583	3433	3440	0	1770	0	2787
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	0	5085	1583	3433	3440	0	1770	0	2787
Satd. Flow (RTOR)			92			76		14				110
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	418	1004	222	0	686	73	798	288	65	165	0	497
Adj. Flow (vph)	435	1046	231	0	715	76	831	300	68	172	0	518
Lane Group Flow (vph)	435	1046	231	0	715	76	831	368	0	172	0	518
Turn Type	Prot		Free			pm+ov	Prot			Prot		Over
Protected Phases	5	2			6	7	3	8		7		5
Permitted Phases			Free			6						
Detector Phases	5	2			6	7	3	8		7		5
Minimum Initial (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0		4.0
Minimum Split (s)	8.5	20.5			20.5	8.5	8.5	20.5		8.5		8.5
Total Split (s)	50.0	97.1	0.0	0.0	47.1	39.8	82.9	43.1	0.0	39.8	0.0	50.0
Total Split (%)	27.8%	53.9%	0.0%	0.0%	26.2%	22.1%	46.1%	23.9%	0.0%	22.1%	0.0%	27.8%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5		3.5		3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0		1.0		1.0
Lead/Lag	Lag				Lead	Lag		Lead		Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes		Yes		Yes		Yes
Recall Mode	None	C-Max			C-Max	None	None	Max		None		None
Act Effct Green (s)	46.0	106.3	180.0		56.3	82.9	65.7	39.1		22.6		46.0
Actuated g/C Ratio	0.26	0.59	1.00		0.31	0.46	0.36	0.22		0.13		0.26
v/c Ratio	0.50	0.50	0.15		0.45	0.10	0.66	0.49		0.77		0.65
Control Delay	28.7	5.1	0.2		51.4	5.2	50.3	61.7		98.1		50.9
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.3	0.0		0.0		0.0
Total Delay	28.7	5.1	0.2		51.4	5.2	50.7	61.7		98.1		50.9
LOS	C	A	A		D	A	D	E		F		D
Approach Delay		10.4			46.9			54.0				
Approach LOS		B			D			D				

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 86 (48%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 37.1 Intersection LOS: D
Intersection Capacity Utilization 63.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 8: San Marcos Blvd & SR-78 WB Ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	14	207	4	0	241	0	15	0	1	1	0	39
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	15	227	4	0	265	0	16	0	1	1	0	43
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		417										
pX, platoon unblocked												
vC, conflicting volume	265			232			436	525	116	410	527	132
vC1, stage 1 conf vol	0			0								
vC2, stage 2 conf vol	0			0								
vCu, unblocked vol	265			232			436	525	116	410	527	132
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)	3.1			3.1								
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			97	100	100	100	100	95
cM capacity (veh/h)	992			1005			474	449	914	519	447	892

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	129	118	0	177	88	18	44
Volume Left	15	0	0	0	0	16	1
Volume Right	0	4	0	0	0	1	43
cSH	992	1700	1700	1700	1700	489	877
Volume to Capacity	0.02	0.07	0.00	0.10	0.05	0.04	0.05
Queue Length 95th (ft)	1	0	0	0	0	3	4
Control Delay (s)	1.2	0.0	0.0	0.0	0.0	12.6	9.3
Lane LOS	A					B	A
Approach Delay (s)	0.6		0.0			12.6	9.3
Approach LOS						B	A

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	30.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	28	253	15	2	140	2	7	0	0	1	0	9
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	30	272	16	2	151	2	8	0	0	1	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		417										
pX, platoon unblocked												
vC, conflicting volume	153			288			430	497	144	352	504	76
vC1, stage 1 conf vol	0			0								
vC2, stage 2 conf vol	0			0								
vCu, unblocked vol	153			288			430	497	144	352	504	76
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)	3.1			3.1								
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			98	100	100	100	100	99
cM capacity (veh/h)	1036			983			492	458	877	564	454	969

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	166	152	2	100	52	8	11
Volume Left	30	0	2	0	0	8	1
Volume Right	0	16	0	0	2	0	10
cSH	1036	1700	983	1700	1700	492	904
Volume to Capacity	0.03	0.09	0.00	0.06	0.03	0.02	0.01
Queue Length 95th (ft)	2	0	0	0	0	1	1
Control Delay (s)	1.8	0.0	8.7	0.0	0.0	12.4	9.0
Lane LOS	A		A			B	A
Approach Delay (s)	0.9		0.1			12.4	9.0
Approach LOS						B	A

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	156	50	37	46	81	182
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	170	54	40	49	87	196
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	314	185	283			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	314	185	283			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	94	97			
cM capacity (veh/h)	658	857	1280			

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	170	54	89	283
Volume Left	170	0	40	0
Volume Right	0	54	0	196
cSH	658	857	1280	1700
Volume to Capacity	0.26	0.06	0.03	0.17
Queue Length 95th (ft)	26	5	2	0
Control Delay (s)	12.4	9.5	3.7	0.0
Lane LOS	B	A	A	
Approach Delay (s)	11.7		3.7	0.0
Approach LOS	B			

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	183	49	46	62	59	102
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	206	55	52	70	66	115
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	297	124	181			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	297	124	181			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	94	96			
cM capacity (veh/h)	669	927	1394			

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	206	55	121	181
Volume Left	206	0	52	0
Volume Right	0	55	0	115
cSH	669	927	1394	1700
Volume to Capacity	0.31	0.06	0.04	0.11
Queue Length 95th (ft)	33	5	3	0
Control Delay (s)	12.8	9.1	3.4	0.0
Lane LOS	B	A	A	
Approach Delay (s)	12.0		3.4	0.0
Approach LOS	B			

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	158	50	37	46	81	182
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	170	54	40	49	87	196

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	170	54	89	283
Volume Left (vph)	170	0	40	0
Volume Right (vph)	0	54	0	196
Hadj (s)	0.53	-0.67	0.12	-0.38
Departure Headway (s)	5.9	4.7	5.0	4.3
Degree Utilization, x	0.28	0.07	0.12	0.33
Capacity (veh/h)	579	721	682	805
Control Delay (s)	9.9	6.8	8.7	9.4
Approach Delay (s)	9.2		8.7	9.4
Approach LOS	A		A	A

Intersection Summary			
Delay	9.2		
HCM Level of Service	A		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	183	49	46	62	59	102
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	206	55	52	70	66	115

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	206	55	121	181
Volume Left (vph)	206	0	52	0
Volume Right (vph)	0	55	0	115
Hadj (s)	0.53	-0.67	0.12	-0.35
Departure Headway (s)	5.8	4.6	5.0	4.4
Degree Utilization, x	0.33	0.07	0.17	0.22
Capacity (veh/h)	597	750	687	765
Control Delay (s)	10.4	6.7	8.9	8.7
Approach Delay (s)	9.6		8.9	8.7
Approach LOS	A		A	A

Intersection Summary			
Delay	9.2		
HCM Level of Service	A		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX E

- Near Term Cumulative w/o Project Conditions Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt					0.853							0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	1589	0	1770	3539	0	0	3539	1583
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1770	1589	0	1770	3539	0	0	3539	1583
Satd. Flow (RTOR)					127							309
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	0	0	814	5	245	443	708	0	0	484	290
Adj. Flow (vph)	0	0	0	866	5	261	471	753	0	0	515	309
Lane Group Flow (vph)	0	0	0	866	266	0	471	753	0	0	515	309
Turn Type				Prot			Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases												6
Detector Phases				3	8		5	2			6	6
Minimum Initial (s)				4.0	4.0		4.0	4.0			4.0	4.0
Minimum Split (s)				8.5	20.5		8.5	20.5			20.5	20.5
Total Split (s)	0.0	0.0	0.0	53.0	53.0	0.0	32.0	53.0	0.0	0.0	21.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	30.2%	50.0%	0.0%	0.0%	19.8%	19.8%
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Act Effct Green (s)				49.0	49.0		28.0	49.0			17.0	17.0
Actuated g/C Ratio				0.46	0.46		0.26	0.46			0.16	0.16
v/c Ratio				1.06	0.33		1.01	0.46			0.91	0.60
Control Delay				77.4	10.3		75.7	16.6			65.1	10.1
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0
Total Delay				77.4	10.3		75.7	16.6			65.1	10.1
LOS				E	B		E	B			E	B
Approach Delay					61.6			39.4			44.4	
Approach LOS					E			D			D	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 93 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 48.6 Intersection LOS: D
Intersection Capacity Utilization 97.6% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: SR-78 WB On Ramp & Rancho Santa Fe Rd

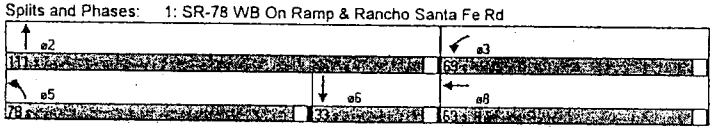
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt					0.853							0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	1589	0	1770	3539	0	0	3539	1583
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1770	1589	0	1770	3539	0	0	3539	1583
Satd. Flow (RTOR)					209							431
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	0	0	476	5	245	727	707	0	0	456	405
Adj. Flow (vph)	0	0	0	506	5	261	773	752	0	0	485	431
Lane Group Flow (vph)	0	0	0	506	266	0	773	752	0	0	485	431
Turn Type				Prot			Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases												6
Detector Phases				3	8		5	2			6	6
Minimum Initial (s)				4.0	4.0		4.0	4.0			4.0	4.0
Minimum Split (s)				8.5	20.5		8.5	20.5			20.5	20.5
Total Split (s)	0.0	0.0	0.0	69.0	69.0	0.0	78.0	111.0	0.0	0.0	33.0	33.0
Total Split (%)	0.0%	0.0%	0.0%	38.3%	38.3%	0.0%	43.3%	61.7%	0.0%	0.0%	18.3%	18.3%
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Act Effct Green (s)				54.7	54.7		81.0	117.3			32.3	32.3
Actuated g/C Ratio				0.30	0.30		0.45	0.65			0.18	0.18
v/c Ratio				0.94	0.42		0.97	0.33			0.76	0.68
Control Delay				87.1	12.4		56.7	2.0			79.4	11.0
Queue Delay				0.0	0.0		0.0	0.2			0.0	0.0
Total Delay				87.1	12.4		56.7	2.2			79.4	11.0
LOS				F	B		E	A			E	B
Approach Delay					61.4			29.8			47.2	
Approach LOS					E			C			D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 96 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 42.4 Intersection LOS: D
Intersection Capacity Utilization 101.7% ICU Level of Service G
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative w/o Project - PM
1: SR-78 WB On Ramp & Rancho Santa Fe Rd

Splits and Phases: 1: SR-78 WB On Ramp & Rancho Santa Fe Rd



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J. Bavos/V Haskell 040912-Lago De San Marcos
Darnell & Associates, Inc.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	2787	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	2787	0	0	0	0	3539	1583	1770	3539	0
Satd. Flow (RTOR)			53						570			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	305	5	724	0	0	0	0	691	513	170	1328	0
Adj. Flow (vph)	339	6	804	0	0	0	0	768	570	189	1476	0
Lane Group Flow (vph)	0	345	804	0	0	0	0	768	570	189	1476	0
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phases	4	4	4					2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	20.5					20.5	20.5	8.5	20.5	
Total Split (s)	43.0	43.0	43.0	0.0	0.0	0.0	0.0	40.0	40.0	23.0	63.0	0.0
Total Split (%)	40.6%	40.6%	40.6%	0.0%	0.0%	0.0%	0.0%	37.7%	37.7%	21.7%	59.4%	0.0%
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effct Green (s)		34.3	34.3					44.0	44.0	15.7	63.7	
Actuated g/C Ratio		0.32	0.32					0.42	0.42	0.15	0.60	
v/c Ratio		0.60	0.86					0.52	0.58	0.72	0.69	
Control Delay		34.2	41.0					11.8	2.9	56.0	4.7	
Queue Delay		0.0	0.0					0.0	0.0	0.0	0.2	
Total Delay		34.2	41.0					11.8	2.9	56.0	4.9	
LOS		C	D					B	A	E	A	
Approach Delay		39.0						8.0			10.7	
Approach LOS		D						A			B	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 89 (84%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 17.7 Intersection LOS: B
Intersection Capacity Utilization 97.6% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 2: SR-78 EB On Ramp & Rancho Santa Fe Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	2787	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	2787	0	0	0	0	3539	1583	1770	3539	0
Satd. Flow (RTOR)			411						469			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	385	5	536	0	0	0	0	1089	692	225	737	0
Adj. Flow (vph)	401	5	558	0	0	0	0	1134	721	234	768	0
Lane Group Flow (vph)	0	406	558	0	0	0	0	1134	721	234	768	0
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phases	4	4	4					2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	20.5					20.5	20.5	8.5	20.5	
Total Split (s)	59.0	59.0	59.0	0.0	0.0	0.0	0.0	82.0	82.0	39.0	121.0	0.0
Total Split (%)	32.8%	32.8%	32.8%	0.0%	0.0%	0.0%	0.0%	45.6%	45.6%	21.7%	67.2%	0.0%
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effct Green (s)		46.3	46.3					86.7	86.7	35.0	125.7	
Actuated g/C Ratio		0.26	0.26					0.48	0.48	0.19	0.70	
v/c Ratio		0.89	0.55					0.67	0.72	0.68	0.31	
Control Delay		85.7	15.4					3.9	5.9	66.7	18.0	
Queue Delay		1.1	0.0					0.1	0.0	0.0	0.4	
Total Delay		86.7	15.4					3.9	5.9	66.7	18.4	
LOS		F	B					A	A	E	B	
Approach Delay		45.5						4.7			29.7	
Approach LOS		D						A			C	

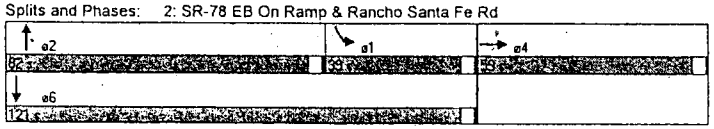
Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 34 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 21.5 Intersection LOS: C
Intersection Capacity Utilization 101.7% ICU Level of Service G
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings

Near Term Cumulative w/o Project - PM
2: SR-78 EB On Ramp & Rancho Santa Fe Rd

Splits and Phases: 2: SR-78 EB On Ramp & Rancho Santa Fe Rd



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.995				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3522	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3522	0	3433	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			58		4				114			23
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	285	720	76	470	1055	35	195	525	718	90	706	430
Adj. Flow (vph)	310	783	83	511	1147	38	212	571	780	98	767	467
Lane Group Flow (vph)	310	783	83	511	1185	0	212	571	780	98	767	467
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6
Detector Phases	7	4	5	3	8		5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5	8.5	8.5	20.5		8.5	20.5	8.5	8.5	20.5	8.5
Total Split (s)	17.0	29.0	13.0	33.0	45.0	0.0	13.0	28.0	33.0	16.0	31.0	17.0
Total Split (%)	16.0%	27.4%	12.3%	31.1%	42.5%	0.0%	12.3%	26.4%	31.1%	15.1%	29.2%	16.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	Max	C-Max	None
Act Effct Green (s)	14.8	27.1	36.1	26.9	39.2		9.0	24.0	50.9	12.0	27.0	45.8
Actuated g/C Ratio	0.14	0.26	0.34	0.25	0.37		0.08	0.23	0.48	0.11	0.25	0.43
v/c Ratio	0.65	0.86	0.14	0.59	0.91		0.73	0.71	0.95	0.49	0.85	0.67
Control Delay	50.9	49.8	5.8	23.2	33.3		47.4	30.3	43.3	50.3	44.1	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	49.8	5.8	23.2	33.3		47.4	30.3	43.3	50.3	44.1	26.6
LOS	D	D	A	C	C		D	C	D	D	D	C
Approach Delay		47.0			30.3			39.1			38.4	
Approach LOS		D			C			D			D	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 50 (47%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 38.0 Intersection LOS: D
Intersection Capacity Utilization 79.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: San Marcos Blvd & Rancho Santa Fe Rd

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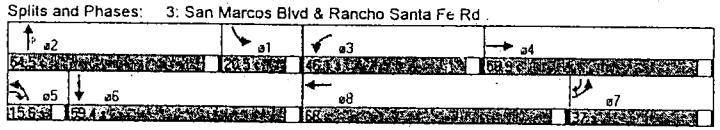
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.993				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3514	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3514	0	3433	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			57		3				111			10
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	735	715	139	600	1385	65	161	1116	213	145	609	605
Adj. Flow (vph)	742	722	140	606	1399	66	163	1127	215	146	615	611
Lane Group Flow (vph)	742	722	140	606	1465	0	163	1127	215	146	615	611
Turn Type	Prot		pm+ov	Prot			Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4						2			6
Detector Phases	7	4	5	3	8		5	2	2	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5	8.5	8.5	20.5		8.5	20.5	20.5	20.5	20.5	8.5
Total Split (s)	37.0	58.9	15.6	46.1	68.0	0.0	15.6	54.5	54.5	20.5	59.4	37.0
Total Split (%)	20.6%	32.7%	8.7%	25.6%	37.8%	0.0%	8.7%	30.3%	30.3%	11.4%	33.0%	20.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	Max	C-Max	None
Act Effct Green (s)	33.0	59.6	75.0	37.4	64.0		11.4	50.5	50.5	16.5	55.6	88.6
Actuated g/C Ratio	0.18	0.33	0.42	0.21	0.36		0.06	0.28	0.28	0.09	0.31	0.49
v/c Ratio	1.18	0.62	0.20	0.85	1.17		0.75	1.13	0.41	0.90	0.56	0.78
Control Delay	156.8	54.0	21.0	68.3	136.4		100.0	116.5	24.7	117.4	46.6	29.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	156.8	54.0	21.0	68.3	136.4		100.0	116.5	24.7	117.4	46.6	29.4
LOS	F	D	C	E	F		F	F	C	F	D	C
Approach Delay		98.7			116.5			101.6			46.5	
Approach LOS		F			F			F			D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 90 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 94.0 Intersection LOS: F
Intersection Capacity Utilization 113.5% ICU Level of Service H
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative w/o Project - PM
3: San Marcos Blvd & Rancho Santa Fe Rd

Splits and Phases: 3: San Marcos Blvd & Rancho Santa Fe Rd



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Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.988			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3497	0	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3497	0	1770	3539
Satd. Flow (RTOR)		250	12			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	83	235	1212	107	140	1203
Adj. Flow (vph)	88	250	1289	114	149	1280
Lane Group Flow (vph)	88	250	1403	0	149	1280
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.5	20.5	20.5		8.5	20.5
Total Split (s)	26.2	26.2	56.3	0.0	23.5	79.8
Total Split (%)	24.7%	24.7%	53.1%	0.0%	22.2%	75.3%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max
Act Effct Green (s)	10.8	10.8	63.7		19.5	87.2
Actuated g/C Ratio	0.10	0.10	0.60		0.18	0.82
v/c Ratio	0.49	0.65	0.67		0.46	0.44
Control Delay	53.3	13.8	16.4		30.1	1.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	53.3	13.8	16.4		30.1	1.3
LOS	D	B	B		C	A
Approach Delay	24.1		16.4			4.3
Approach LOS	C		B			A

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 91 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 11.8 Intersection LOS: B
Intersection Capacity Utilization 59.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 4: Lake San Marcos Dr & Rancho Santa Fe Rd

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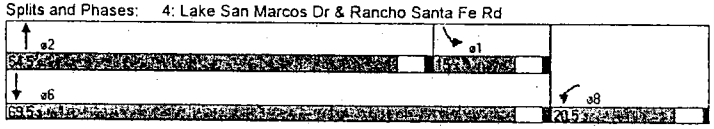
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.985			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3486	0	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3486	0	1770	3539
Satd. Flow (RTOR)		89	21			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	107	85	1454	158	140	1212
Adj. Flow (vph)	111	89	1515	165	146	1262
Lane Group Flow (vph)	111	89	1680	0	146	1262
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.5	20.5	20.5		8.5	20.5
Total Split (s)	20.5	20.5	54.5	0.0	15.0	69.5
Total Split (%)	22.8%	22.8%	60.6%	0.0%	16.7%	77.2%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max
Act Effct Green (s)	11.2	11.2	55.8		11.0	70.8
Actuated g/C Ratio	0.12	0.12	0.62		0.12	0.79
v/c Ratio	0.50	0.32	0.77		0.68	0.45
Control Delay	44.0	11.0	16.2		43.9	1.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	44.0	11.0	16.2		43.9	1.5
LOS	D	B	B		D	A
Approach Delay	29.3		16.2			5.9
Approach LOS	C		B			A

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 19 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 12.6 Intersection LOS: B
Intersection Capacity Utilization 68.9% ICU Level of Service C
Analysis Period (min) 15

1/25/2006 Near Term Cumulative w/o Project - PM
Lanes, Volumes, Timings 4: Lake San Marcos Dr & Rancho Santa Fe Rd

Splits and Phases: 4: Lake San Marcos Dr & Rancho Santa Fe Rd



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J. Bavos/V Haskell 040912-Lago De San Marcos
Darnell & Associates, Inc.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	1863	1583
Satd. Flow (RTOR)		345				3
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	305	605	784	1029	1046	5
Adj. Flow (vph)	314	624	808	1061	1078	5
Lane Group Flow (vph)	314	624	808	1061	1078	5
Turn Type		Prot	Prot			Perm
Protected Phases	4	4	5	2	6	
Permitted Phases						6
Detector Phases	4	4	5	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	20.5
Total Split (s)	28.0	28.0	24.0	78.0	54.0	54.0
Total Split (%)	26.4%	26.4%	22.6%	73.6%	50.9%	50.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	24.0	24.0	20.0	74.0	50.0	50.0
Actuated g/C Ratio	0.23	0.23	0.19	0.70	0.47	0.47
v/c Ratio	0.78	1.00	2.42	0.43	1.23	0.01
Control Delay	53.7	55.1	669.6	7.5	139.7	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	55.1	669.6	7.5	139.7	11.6
LOS	D	E	F	A	F	B
Approach Delay	54.6			293.8	139.1	
Approach LOS	D			F	F	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 2.42
Intersection Signal Delay: 193.0 — Intersection LOS: F
Intersection Capacity Utilization 125.4% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 5: Melrose Dr & Rancho Santa Fe Rd

Y:\040912-Lago De San Marcos (STD)\Analysis\Synchro\01-25-06\NTC-No Proj AM.sy7
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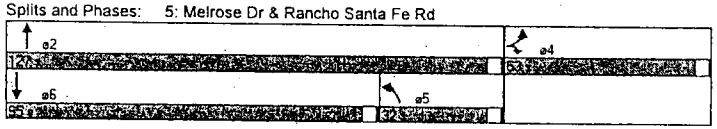
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	1863	1583
Satd. Flow (RTOR)		298				95
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	295	896	487	1127	1079	230
Adj. Flow (vph)	304	924	502	1162	1112	237
Lane Group Flow (vph)	304	924	502	1162	1112	237
Turn Type		Prot	Prot			Perm
Protected Phases	4	4	5	2	6	
Permitted Phases						6
Detector Phases	4	4	5	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	20.5
Total Split (s)	53.0	53.0	32.0	127.0	95.0	95.0
Total Split (%)	29.4%	29.4%	17.8%	70.6%	52.8%	52.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	49.0	49.0	28.0	123.0	91.0	91.0
Actuated g/C Ratio	0.27	0.27	0.16	0.68	0.51	0.51
v/c Ratio	0.63	1.43	1.83	0.48	1.18	0.28
Control Delay	64.4	230.5	423.1	14.2	131.8	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	230.5	423.1	14.2	131.8	15.7
LOS	E	F	F	B	F	B
Approach Delay	189.4			137.6	111.4	
Approach LOS	F			F	F	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.83
Intersection Signal Delay: 144.3 — Intersection LOS: F
Intersection Capacity Utilization 118.9% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 5: Melrose Dr & Rancho Santa Fe Rd



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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.730			0.734		
Satd. Flow (perm)	1770	3514	0	1770	3539	1583	1360	1863	1583	1367	1863	1583
Satd. Flow (RTOR)		8				115			52			32
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	260	1273	60	70	1150	110	45	35	50	60	40	425
Adj. Flow (vph)	271	1326	62	73	1198	115	47	36	52	62	42	443
Lane Group Flow (vph)	271	1388	0	73	1198	115	47	36	52	62	42	443
Turn Type	Prot			Prot		Perm	Perm		pm+ov	Perm		pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases						6	8		8	4		4
Detector Phases	5	2		1	6	6	8	8	1	4	4	5
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	20.5	20.5	8.5	20.5	20.5	8.5
Total Split (s)	31.7	69.6	0.0	14.9	52.8	52.8	21.5	21.5	14.9	21.5	21.5	31.7
Total Split (%)	29.9%	65.7%	0.0%	14.1%	49.8%	49.8%	20.3%	20.3%	14.1%	20.3%	20.3%	29.9%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead			Lead			Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes			Yes			Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	None	Max	Max	None
Act Effct Green (s)	27.7	69.2		9.4	48.8	48.8	17.5	17.5	30.9	17.5	17.5	49.2
Actuated g/C Ratio	0.26	0.65		0.09	0.46	0.46	0.17	0.17	0.29	0.17	0.17	0.46
v/c Ratio	0.59	0.60		0.46	0.74	0.15	0.21	0.12	0.10	0.27	0.14	0.59
Control Delay	30.2	7.4		41.1	24.1	4.9	41.1	38.9	8.1	42.5	39.2	23.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.2	7.4		41.1	24.1	4.9	41.1	38.9	8.1	42.5	39.2	23.2
LOS	C	A		D	C	A	D	D	A	D	D	C
Approach Delay		11.1			23.4			27.8			26.6	
Approach LOS		B			C			C			C	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 100 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 18.6 Intersection LOS: B
Intersection Capacity Utilization 71.4% ICU Level of Service C
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative w/o Project-AM
6: San Marcos Blvd & Las Posas Rd

Splits and Phases: 6: San Marcos Blvd & Las Posas Rd

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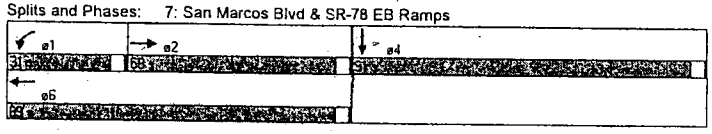
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↑	↰↰↑	↑↑↑					↰	↑	↱
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.950	
Satd. Flow (prot)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			719									14
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	1264	1059	320	1465	0	0	0	0	370	0	555
Adj. Flow (vph)	0	1303	1092	330	1510	0	0	0	0	381	0	572
Lane Group Flow (vph)	0	1303	1092	330	1510	0	0	0	0	191	-190	572
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phases		2	2	1	6					4	4	4
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	20.5
Total Split (s)	0.0	58.0	58.0	31.0	89.0	0.0	0.0	0.0	0.0	91.0	91.0	91.0
Total Split (%)	0.0%	32.2%	32.2%	17.2%	49.4%	0.0%	0.0%	0.0%	0.0%	50.6%	50.6%	50.6%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					Max	Max	Max
Act Effct Green (s)		58.8	58.8	22.2	85.0					87.0	87.0	87.0
Actuated g/C Ratio		0.33	0.33	0.12	0.47					0.48	0.48	0.48
v/c Ratio		0.78	0.78	0.78	0.63					0.24	0.23	0.74
Control Delay		45.3	9.9	79.9	27.2					28.1	28.1	43.6
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		45.3	9.9	79.9	27.2					28.1	28.1	43.6
LOS		D	A	E	C					C	C	D
Approach Delay		29.2			36.6						37.4	
Approach LOS		C			D						D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 78 (43%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 33.3 Intersection LOS: C
Intersection Capacity Utilization 69.3% ICU Level of Service C
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative w/o Project - PM
7: San Marcos Blvd & SR-78 EB Ramps

Splits and Phases: 7: San Marcos Blvd & SR-78 EB Ramps



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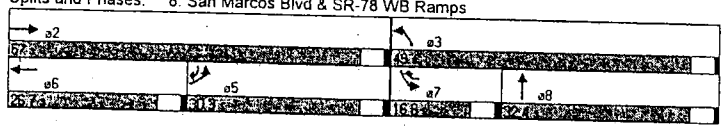
040912-Lago De San Marcos

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.95	0.95	1.00	1.00	0.88
Frt			0.850			0.850		0.982				0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	0	5085	1583	3433	3476	0	1770	0	2787
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	0	5085	1583	3433	3476	0	1770	0	2787
Satd. Flow (RTOR)			216			102		14				23
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	415	511	190	0	783	105	1123	400	55	90	0	525
Adj. Flow (vph)	472	581	216	0	890	119	1276	455	62	102	0	597
Lane Group Flow (vph)	472	581	216	0	890	119	1276	517	0	102	0	597
Turn Type	Prot		Free			pm+ov	Prot			Prot		Over
Protected Phases	5	2			6	7	3	8		7		5
Permitted Phases			Free			6						
Detector Phases	5	2			6	7	3	8		7		5
Minimum Initial (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0		4.0
Minimum Split (s)	8.5	20.5			20.5	8.5	8.5	20.5		8.5		8.5
Total Split (s)	30.3	57.0	0.0	0.0	26.7	16.6	49.0	32.4	0.0	16.6	0.0	30.3
Total Split (%)	28.6%	53.8%	0.0%	0.0%	25.2%	15.7%	46.2%	30.6%	0.0%	15.7%	0.0%	28.6%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5		3.5		3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0		1.0		1.0
Lead/Lag	Lag				Lead	Lead		Lag		Lead		Lag
Lead-Lag Optimize?	Yes				Yes	Yes		Yes		Yes		Yes
Recall Mode	None	C-Max			C-Max	None	None	Max		None		None
Act Effct Green (s)	26.3	53.0	106.0		22.7	33.6	45.0	30.1		10.9		26.3
Actuated g/C Ratio	0.25	0.50	1.00		0.21	0.32	0.42	0.28		0.10		0.25
v/c Ratio	0.55	0.33	0.14		0.82	0.21	0.88	0.52		0.56		0.84
Control Delay	22.6	7.4	0.2		46.8	4.3	36.2	33.6		57.0		48.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	22.6	7.4	0.2		46.8	4.3	36.2	33.6		57.0		48.7
LOS	C	A	A		D	A	D	C		E		D
Approach Delay		11.8			41.8			35.4				
Approach LOS		B			D			D				

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 52 (49%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 32.6 Intersection LOS: C
Intersection Capacity Utilization 75.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: San Marcos Blvd & SR-78 WB Ramps



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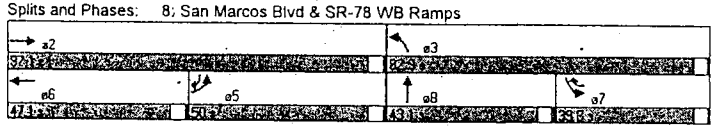
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.95	0.95	1.00	1.00	0.88
Frt			0.850			0.850		0.973				0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	0	5085	1583	3433	3444	0	1770	0	2787
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	0	5085	1583	3433	3444	0	1770	0	2787
Satd. Flow (RTOR)			91			78		13				86
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	435	1054	230	0	742	75	867	295	65	170	0	515
Adj. Flow (vph)	453	1098	240	0	773	78	903	307	68	177	0	536
Lane Group Flow (vph)	453	1098	240	0	773	78	903	375	0	177	0	536
Turn Type	Prot		Free			pm+ov	Prot			Prot		Over
Protected Phases	5	2			6	7	3	8		7		5
Permitted Phases			Free			6						
Detector Phases	5	2			6	7	3	8		7		5
Minimum Initial (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0		4.0
Minimum Split (s)	8.5	20.5			20.5	8.5	8.5	20.5		8.5		8.5
Total Split (s)	50.0	97.1	0.0	0.0	47.1	39.8	82.9	43.1	0.0	39.8	0.0	50.0
Total Split (%)	27.8%	53.9%	0.0%	0.0%	26.2%	22.1%	46.1%	23.9%	0.0%	22.1%	0.0%	27.8%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5		3.5		3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0		1.0		1.0
Lead/Lag	Lag				Lead	Lag		Lead		Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes		Yes		Yes		Yes
Recall Mode	None	C-Max			C-Max	None	None	Max		None		None
Act Effct Green (s)	46.0	105.8	180.0		55.8	82.9	66.2	39.1		23.1		46.0
Actuated g/C Ratio	0.26	0.59	1.00		0.31	0.46	0.37	0.22		0.13		0.26
v/c Ratio	0.52	0.53	0.15		0.49	0.10	0.71	0.49		0.78		0.69
Control Delay	28.9	5.3	0.2		52.6	5.2	52.0	62.1		97.8		55.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.5	0.0		0.0		0.0
Total Delay	28.9	5.3	0.2		52.6	5.2	52.4	62.1		97.8		55.7
LOS	C	A	A		D	A	D	E		F		E
Approach Delay		10.6			48.3			55.3				
Approach LOS		B			D			E				

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 86 (48%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 38.4 Intersection LOS: D
Intersection Capacity Utilization 67.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 8: San Marcos Blvd & SR-78 WB Ramps



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	15	247	268	5	5	40
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	16	271	295	5	5	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		418				
pX, platoon unblocked						
vC, conflicting volume	300				466	150
vC1, stage 1 conf vol	0					
vC2, stage 2 conf vol	0					
vCu, unblocked vol	300				466	150
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)	3.1					
tF (s)	2.2				3.5	3.3
p0 queue free %	98				99	95
cM capacity (veh/h)	979				517	870

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	107	181	196	104	49
Volume Left	16	0	0	0	5
Volume Right	0	0	0	5	44
cSH	979	1700	1700	1700	808
Volume to Capacity	0.02	0.11	0.12	0.06	0.06
Queue Length 95th (ft)	1	0	0	0	5
Control Delay (s)	1.5	0.0	0.0	0.0	9.7
Lane LOS	A				A
Approach Delay (s)	0.5		0.0		9.7
Approach LOS					A

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	28.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	30	288	182	5	5	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	32	310	196	5	5	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		417				
pX, platoon unblocked						
vC, conflicting volume	201				418	101
vC1, stage 1 conf vol	0					
vC2, stage 2 conf vol	0					
vCu, unblocked vol	201				418	101
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)	3.1					
tF (s)	2.2				3.5	3.3
p0 queue free %	97				99	99
cM capacity (veh/h)	1017				545	935

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	135	206	130	71	16
Volume Left	32	0	0	0	5
Volume Right	0	0	0	5	11
cSH	1017	1700	1700	1700	755
Volume to Capacity	0.03	0.12	0.08	0.04	0.02
Queue Length 95th (ft)	2	0	0	0	2
Control Delay (s)	2.3	0.0	0.0	0.0	9.9
Lane LOS	A				A
Approach Delay (s)	0.9		0.0		9.9
Approach LOS					A

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	183	59	44	50	85	199
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	197	63	47	54	91	214
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	347	198	305			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	347	198	305			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	92	96			
cM capacity (veh/h)	626	843	1255			

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	197	63	101	305
Volume Left	197	0	47	0
Volume Right	0	63	0	214
cSH	626	843	1255	1700
Volume to Capacity	0.31	0.08	0.04	0.18
Queue Length 95th (ft)	34	6	3	0
Control Delay (s)	13.4	9.6	3.9	0.0
Lane LOS	B	A	A	
Approach Delay (s)	12.5		3.9	0.0
Approach LOS	B			

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	202	56	61	65	60	126
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	227	63	69	73	67	142
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	348	138	209			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	348	138	209			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	63	93	95			
cM capacity (veh/h)	616	910	1362			

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	227	63	142	209
Volume Left	227	0	69	0
Volume Right	0	63	0	142
cSH	616	910	1362	1700
Volume to Capacity	0.37	0.07	0.05	0.12
Queue Length 95th (ft)	42	6	4	0
Control Delay (s)	14.2	9.2	4.0	0.0
Lane LOS	B	A	A	
Approach Delay (s)	13.1		4.0	0.0
Approach LOS	B			

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	183	59	44	50	85	199
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	197	63	47	54	91	214
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total (vph)	197	63	101	305		
Volume Left (vph)	197	0	47	0		
Volume Right (vph)	0	63	0	214		
Hadj (s)	0.53	-0.67	0.13	-0.39		
Departure Headway (s)	6.0	4.8	5.1	4.4		
Degree Utilization, x	0.33	0.08	0.14	0.37		
Capacity (veh/h)	570	707	660	782		
Control Delay (s)	10.7	7.0	9.0	9.9		
Approach Delay (s)	9.8		9.0	9.9		
Approach LOS	A		A	A		

Intersection Summary			
Delay	9.7		
HCM Level of Service	A		
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

10: Lake San Marcos Dr & San Marino Dr

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	202	56	61	65	60	126
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	227	63	69	73	67	142
Direction, Lane #	EB 1	EB 2	NB 1	SB 1		
Volume Total (vph)	227	63	142	209		
Volume Left (vph)	227	0	69	0		
Volume Right (vph)	0	63	0	142		
Hadj (s)	0.53	-0.67	0.13	-0.37		
Departure Headway (s)	5.9	4.7	5.1	4.5		
Degree Utilization, x	0.37	0.08	0.20	0.26		
Capacity (veh/h)	583	727	666	748		
Control Delay (s)	11.1	6.9	9.4	9.1		
Approach Delay (s)	10.2		9.4	9.1		
Approach LOS	B		A	A		

Intersection Summary			
Delay	9.7		
HCM Level of Service	A		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX F

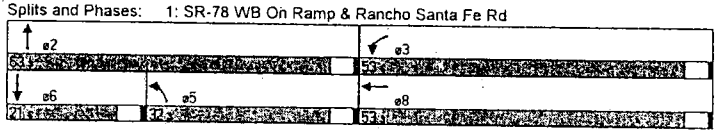
- Near Term Cumulative With Project Conditions Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt					0.853							0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	1589	0	1770	3539	0	0	3539	1583
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1770	1589	0	1770	3539	0	0	3539	1583
Satd. Flow (RTOR)					127							309
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	0	0	814	5	245	447	709	0	0	484	290
Adj. Flow (vph)	0	0	0	866	5	261	476	754	0	0	515	309
Lane Group Flow (vph)	0	0	0	866	266	0	476	754	0	0	515	309
Turn Type				Prot			Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases												6
Detector Phases				3	8		5	2			6	6
Minimum Initial (s)				4.0	4.0		4.0	4.0			4.0	4.0
Minimum Split (s)				8.5	20.5		8.5	20.5			20.5	20.5
Total Split (s)	0.0	0.0	0.0	53.0	53.0	0.0	32.0	53.0	0.0	0.0	21.0	21.0
Total Split (%)	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	30.2%	50.0%	0.0%	0.0%	19.8%	19.8%
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lead/Lag							Lag				Lead	Lead
Lead-Lag Optimize?							Yes				Yes	Yes
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Act Effct Green (s)				49.0	49.0		28.0	49.0			17.0	17.0
Actuated g/C Ratio				0.46	0.46		0.26	0.46			0.16	0.16
v/c Ratio				1.06	0.33		1.02	0.46			0.91	0.60
Control Delay				77.4	10.3		78.2	16.5			65.1	10.1
Queue Delay				0.0	0.0		0.0	0.0			0.0	0.0
Total Delay				77.4	10.3		78.2	16.5			65.1	10.1
LOS				E	B		E	B			E	B
Approach Delay					61.6			40.4			44.4	
Approach LOS					E			D			D	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 93 (88%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 49.0 Intersection LOS: D
Intersection Capacity Utilization 97.8% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: SR-78 WB On Ramp & Rancho Santa Fe Rd

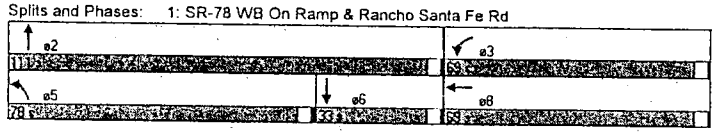


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt					0.853							0.850
Flt Protected				0.950			0.950					
Satd. Flow (prot)	0	0	0	1770	1589	0	1770	3539	0	0	3539	1583
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	0	0	1770	1589	0	1770	3539	0	0	3539	1583
Satd. Flow (RTOR)					209							431
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	0	0	477	5	245	729	707	0	0	457	405
Adj. Flow (vph)	0	0	0	507	5	261	776	752	0	0	486	431
Lane Group Flow (vph)	0	0	0	507	266	0	776	752	0	0	486	431
Turn Type				Prot			Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases												6
Detector Phases				3	8		5	2			6	6
Minimum Initial (s)				4.0	4.0		4.0	4.0			4.0	4.0
Minimum Split (s)				8.5	20.5		8.5	20.5			20.5	20.5
Total Split (s)	0.0	0.0	0.0	69.0	69.0	0.0	78.0	111.0	0.0	0.0	33.0	33.0
Total Split (%)	0.0%	0.0%	0.0%	38.3%	38.3%	0.0%	43.3%	61.7%	0.0%	0.0%	18.3%	18.3%
Yellow Time (s)				3.5	3.5		3.5	3.5			3.5	3.5
All-Red Time (s)				1.0	1.0		1.0	1.0			1.0	1.0
Lead/Lag							Lead				Lag	Lag
Lead-Lag Optimize?							Yes				Yes	Yes
Recall Mode				None	None		None	C-Max			C-Max	C-Max
Act Effct Green (s)				54.8	54.8		80.9	117.2			32.3	32.3
Actuated g/C Ratio				0.30	0.30		0.45	0.65			0.18	0.18
v/c Ratio				0.94	0.42		0.97	0.33			0.77	0.68
Control Delay				87.1	12.3		57.7	2.0			79.6	11.1
Queue Delay				0.0	0.0		0.0	0.2			0.0	0.0
Total Delay				87.1	12.3		57.7	2.2			79.6	11.1
LOS				F	B		E	A			E	B
Approach Delay					61.4			30.4			47.4	
Approach LOS					E			C			D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 96 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 42.7 Intersection LOS: D
Intersection Capacity Utilization 101.9% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: SR-78 WB On Ramp & Rancho Santa Fe Rd

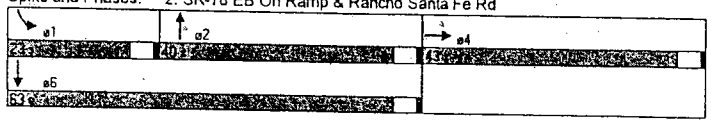


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	2787	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	2787	0	0	0	0	3539	1583	1770	3539	0
Satd. Flow (RTOR)			53						571			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	305	5	725	0	0	0	0	696	514	170	1328	0
Adj. Flow (vph)	339	6	806	0	0	0	0	773	571	189	1476	0
Lane Group Flow (vph)	0	345	806	0	0	0	0	773	571	189	1476	0
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phases	4	4	4					2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	20.5					20.5	20.5	8.5	20.5	
Total Split (s)	43.0	43.0	43.0	0.0	0.0	0.0	0.0	40.0	40.0	23.0	63.0	0.0
Total Split (%)	40.6%	40.6%	40.6%	0.0%	0.0%	0.0%	0.0%	37.7%	37.7%	21.7%	59.4%	0.0%
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effct Green (s)		34.3	34.3					44.0	44.0	15.7	63.7	
Actuated g/C Ratio		0.32	0.32					0.42	0.42	0.15	0.60	
v/c Ratio		0.60	0.86					0.53	0.58	0.72	0.69	
Control Delay		34.2	41.1					11.9	2.9	56.0	4.7	
Queue Delay		0.0	0.0					0.0	0.0	0.0	0.2	
Total Delay		34.2	41.1					11.9	2.9	56.0	4.9	
LOS		C	D					B	A	E	A	
Approach Delay		39.0						8.1			10.7	
Approach LOS		D						A			B	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 89 (84%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 17.7 Intersection LOS: B
Intersection Capacity Utilization 97.8% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 2: SR-78 EB On Ramp & Rancho Santa Fe Rd



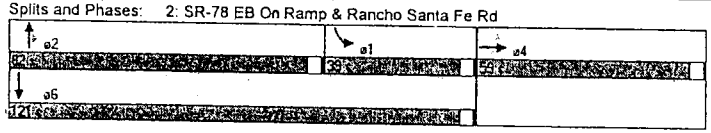
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑	↱↱					↑↑	↱	↰	↑↑	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected		0.953								0.950		
Satd. Flow (prot)	0	1775	2787	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted		0.953								0.950		
Satd. Flow (perm)	0	1775	2787	0	0	0	0	3539	1583	1770	3539	0
Satd. Flow (RTOR)			409						468			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	385	5	540	0	0	0	0	1091	692	225	739	0
Adj. Flow (vph)	401	5	562	0	0	0	0	1136	721	234	770	0
Lane Group Flow (vph)	0	406	562	0	0	0	0	1136	721	234	770	0
Turn Type	Perm		Perm						Perm	Prot		
Protected Phases		4						2		1	6	
Permitted Phases	4		4						2			
Detector Phases	4	4	4					2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	20.5					20.5	20.5	8.5	20.5	
Total Split (s)	59.0	59.0	59.0	0.0	0.0	0.0	0.0	82.0	82.0	39.0	121.0	0.0
Total Split (%)	32.8%	32.8%	32.8%	0.0%	0.0%	0.0%	0.0%	45.6%	45.6%	21.7%	67.2%	0.0%
Yellow Time (s)	3.5	3.5	3.5					3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lead/Lag								Lead	Lead	Lag		
Lead-Lag Optimize?								Yes	Yes	Yes		
Recall Mode	None	None	None					C-Max	C-Max	None	C-Max	
Act Effct Green (s)		46.3	46.3					86.7	86.7	35.0	125.7	
Actuated g/C Ratio		0.26	0.26					0.48	0.48	0.19	0.70	
v/c Ratio		0.89	0.55					0.67	0.72	0.68	0.31	
Control Delay		85.7	16.0					3.9	5.9	66.7	18.0	
Queue Delay		1.1	0.0					0.1	0.0	0.0	0.4	
Total Delay		86.8	16.0					3.9	5.9	66.7	18.4	
LOS		F	B					A	A	E	B	
Approach Delay		45.7						4.7			29.6	
Approach LOS		D						A			C	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 34 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 21.6 Intersection LOS: C
Intersection Capacity Utilization 101.9% ICU Level of Service G
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative + Project - PM
2: SR-78 EB On Ramp & Rancho Santa Fe Rd

Splits and Phases: 2: SR-78 EB On Ramp & Rancho Santa Fe Rd



Y:\040912-Lago De San Marcos (STD)\Analysis\Synchro\01-25-06\NTC + Proj PM.sy7
J. Bavos/V Haskell
Darnell & Associates, Inc.
040912-Lago De San Marcos

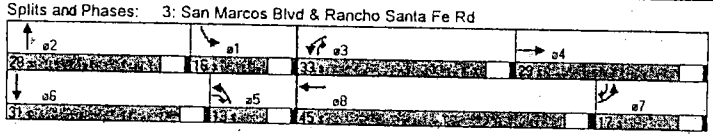
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.995				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3522	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3522	0	3433	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			58		4				114			22
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	285	720	77	471	1055	35	198	531	720	90	707	430
Adj. Flow (vph)	310	783	84	512	1147	38	215	577	783	98	768	467
Lane Group Flow (vph)	310	783	84	512	1185	0	215	577	783	98	768	467
Turn Type	Prot		pm+ov	Prot			Prot		pm+ov	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6
Detector Phases	7	4	5	3	8		5	2	3	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5	8.5	8.5	20.5		8.5	20.5	8.5	8.5	20.5	8.5
Total Split (s)	17.0	29.0	13.0	33.0	45.0	0.0	13.0	28.0	33.0	16.0	31.0	17.0
Total Split (%)	16.0%	27.4%	12.3%	31.1%	42.5%	0.0%	12.3%	26.4%	31.1%	15.1%	29.2%	16.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	None	Max	C-Max	None
Act Effct Green (s)	14.8	27.0	36.0	27.0	39.2		9.0	24.0	51.0	12.0	27.0	45.8
Actuated g/C Ratio	0.14	0.25	0.34	0.25	0.37		0.08	0.23	0.48	0.11	0.25	0.43
v/c Ratio	0.65	0.87	0.15	0.59	0.91		0.74	0.72	0.95	0.49	0.85	0.67
Control Delay	50.9	50.3	5.8	23.1	33.3		47.9	30.7	43.2	50.4	44.2	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	50.3	5.8	23.1	33.3		47.9	30.7	43.2	50.4	44.2	26.7
LOS	D	D	A	C	C		D	C	D	D	D	C
Approach Delay		47.3			30.2			39.3			38.5	
Approach LOS		D			C			D			D	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 50 (47%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 38.1 Intersection LOS: D
Intersection Capacity Utilization 79.5% ICU Level of Service D
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative + Project-AM
3: San Marcos Blvd & Rancho Santa Fe Rd

Splits and Phases: 3: San Marcos Blvd & Rancho Santa Fe Rd



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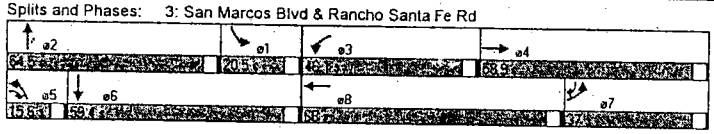
040912-Lago De San Marcos

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	0.95	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850		0.993				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3514	0	3433	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3514	0	3433	3539	1583	1770	3539	1583
Satd. Flow (RTOR)			55		3				111			9
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	735	715	142	602	1385	65	163	1118	214	145	615	605
Adj. Flow (vph)	742	722	143	608	1399	66	165	1129	216	146	621	611
Lane Group Flow (vph)	742	722	143	608	1465	0	165	1129	216	146	621	611
Turn Type	Prot		pm+ov	Prot			Prot		Perm	Prot		pm+ov
Protected Phases	7	4	5	3	8		5	2		1	6	7
Permitted Phases			4						2			6
Detector Phases	7	4	5	3	8		5	2	2	1	6	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5	8.5	8.5	20.5		8.5	20.5	20.5	20.5	20.5	8.5
Total Split (s)	37.0	58.9	15.6	46.1	68.0	0.0	15.6	54.5	54.5	20.5	59.4	37.0
Total Split (%)	20.6%	32.7%	8.7%	25.6%	37.8%	0.0%	8.7%	30.3%	30.3%	11.4%	33.0%	20.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead		Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	Max	C-Max	None
Act Effct Green (s)	33.0	59.5	74.9	37.5	64.0		11.4	50.5	50.5	16.5	55.6	88.6
Actuated g/C Ratio	0.18	0.33	0.42	0.21	0.36		0.06	0.28	0.28	0.09	0.31	0.49
v/c Ratio	1.18	0.62	0.21	0.85	1.17		0.76	1.14	0.41	0.90	0.57	0.78
Control Delay	156.8	54.0	21.8	68.2	136.3		100.6	117.1	24.7	117.7	46.9	29.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	156.8	54.0	21.8	68.2	136.3		100.6	117.1	24.7	117.7	46.9	29.7
LOS	F	D	C	E	F		F	F	C	F	D	C
Approach Delay		98.6			116.4			102.1			46.8	
Approach LOS		F			F			F			D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 90 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 94.2 Intersection LOS: F
Intersection Capacity Utilization 113.6% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 3: San Marcos Blvd & Rancho Santa Fe Rd



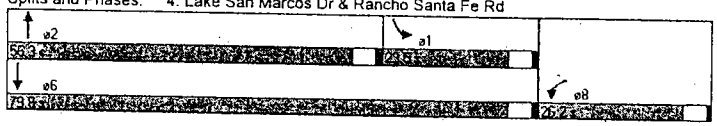
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.988			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3497	0	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3497	0	1770	3539
Satd. Flow (RTOR)		262	12			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	87	246	1212	108	143	1203
Adj. Flow (vph)	93	262	1289	115	152	1280
Lane Group Flow (vph)	93	262	1404	0	152	1280
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.5	20.5	20.5		8.5	20.5
Total Split (s)	26.2	26.2	56.3	0.0	23.5	79.8
Total Split (%)	24.7%	24.7%	53.1%	0.0%	22.2%	75.3%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max
Act Effct Green (s)	11.1	11.1	63.4		19.5	86.9
Actuated g/C Ratio	0.10	0.10	0.60		0.18	0.82
v/c Ratio	0.50	0.65	0.67		0.47	0.44
Control Delay	53.4	13.6	16.7		30.2	1.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	53.4	13.6	16.7		30.2	1.3
LOS	D	B	B		C	A
Approach Delay	24.0		16.7			4.4
Approach LOS	C		B			A

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 91 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 12.0 Intersection LOS: B
Intersection Capacity Utilization 59.7% ICU Level of Service B
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative + Project-AM
4: Lake San Marcos Dr & Rancho Santa Fe Rd

Splits and Phases: 4: Lake San Marcos Dr & Rancho Santa Fe Rd



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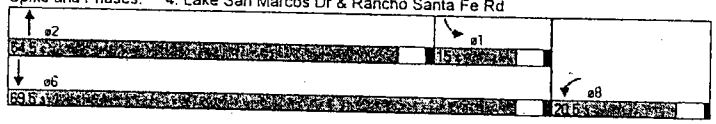
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.985			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3486	0	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3486	0	1770	3539
Satd. Flow (RTOR)		94	21			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	109	90	1454	162	151	1212
Adj. Flow (vph)	114	94	1515	169	157	1262
Lane Group Flow (vph)	114	94	1684	0	157	1262
Turn Type		Perm			Prot	
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phases	8	8	2		1	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.5	20.5	20.5		8.5	20.5
Total Split (s)	20.5	20.5	54.5	0.0	15.0	69.5
Total Split (%)	22.8%	22.8%	60.6%	0.0%	16.7%	77.2%
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	C-Max		None	C-Max
Act Effct Green (s)	11.4	11.4	55.6		11.0	70.6
Actuated g/C Ratio	0.13	0.13	0.62		0.12	0.78
v/c Ratio	0.51	0.33	0.78		0.73	0.45
Control Delay	43.9	10.9	16.5		47.3	1.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	43.9	10.9	16.5		47.3	1.5
LOS	D	B	B		D	A
Approach Delay	29.0		16.5			6.6
Approach LOS	C		B			A

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 19 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 13.0 Intersection LOS: B
Intersection Capacity Utilization 69.8% ICU Level of Service C
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative + Project - PM
4: Lake San Marcos Dr & Rancho Santa Fe Rd

Splits and Phases: 4: Lake San Marcos Dr & Rancho Santa Fe Rd



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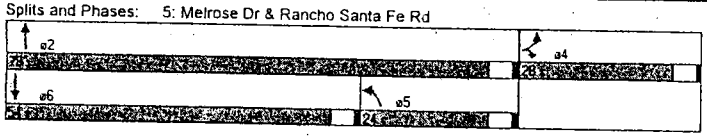
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	1863	1583
Satd. Flow (RTOR)		345				4
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	305	605	784	1030	1049	6
Adj. Flow (vph)	314	624	808	1062	1081	6
Lane Group Flow (vph)	314	624	808	1062	1081	6
Turn Type		Prot	Prot			Perm
Protected Phases	4	4	5	2	6	
Permitted Phases						6
Detector Phases	4	4	5	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	20.5
Total Split (s)	28.0	28.0	24.0	78.0	54.0	54.0
Total Split (%)	26.4%	26.4%	22.6%	73.6%	50.9%	50.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	24.0	24.0	20.0	74.0	50.0	50.0
Actuated g/C Ratio	0.23	0.23	0.19	0.70	0.47	0.47
v/c Ratio	0.78	1.00	2.42	0.43	1.23	0.01
Control Delay	53.7	55.1	669.6	7.5	141.1	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	55.1	669.6	7.5	141.1	10.8
LOS	D	E	F	A	F	B
Approach Delay	54.6			293.6	140.4	
Approach LOS	D			F	F	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 2.42
Intersection Signal Delay: 193.3 — Intersection LOS: F
Intersection Capacity Utilization 125.5% — ICU Level of Service H
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative + Project-AM
5: Melrose Dr & Rancho Santa Fe Rd

Splits and Phases: 5: Melrose Dr & Rancho Santa Fe Rd



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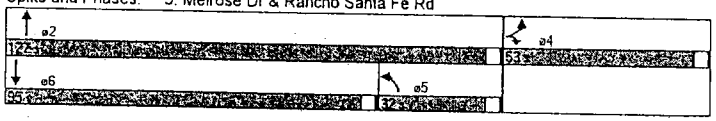
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	3539	1863	1583
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1770	1583	1770	3539	1863	1583
Satd. Flow (RTOR)		298				95
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	296	896	487	1130	1080	231
Adj. Flow (vph)	305	924	502	1165	1113	238
Lane Group Flow (vph)	305	924	502	1165	1113	238
Turn Type		Prot	Prot			Perm
Protected Phases	4	4	5	2	6	
Permitted Phases						6
Detector Phases	4	4	5	2	6	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	20.5
Total Split (s)	53.0	53.0	32.0	127.0	95.0	95.0
Total Split (%)	29.4%	29.4%	17.8%	70.6%	52.8%	52.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag		Lead	Lead
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	49.0	49.0	28.0	123.0	91.0	91.0
Actuated g/C Ratio	0.27	0.27	0.16	0.68	0.51	0.51
v/c Ratio	0.63	1.43	1.83	0.48	1.18	0.28
Control Delay	64.5	230.5	423.1	14.3	132.3	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	230.5	423.1	14.3	132.3	15.7
LOS	E	F	F	B	F	B
Approach Delay	189.3			137.4	111.7	
Approach LOS	F			F	F	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.83
Intersection Signal Delay: 144.2 — Intersection LOS: F
Intersection Capacity Utilization 119.0% — ICU Level of Service H
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative + Project - PM
5: Melrose Dr & Rancho Santa Fe Rd

Splits and Phases: 5: Melrose Dr & Rancho Santa Fe Rd



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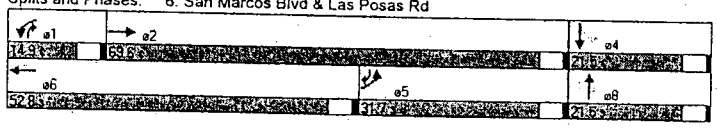
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3514	0	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.730			0.734		
Satd. Flow (perm)	1770	3514	0	1770	3539	1583	1360	1863	1583	1367	1863	1583
Satd. Flow (RTOR)		8				115			52			32
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	261	1274	60	70	1151	110	45	35	50	60	40	425
Adj. Flow (vph)	272	1327	62	73	1199	115	47	36	52	62	42	443
Lane Group Flow (vph)	272	1389	0	73	1199	115	47	36	52	62	42	443
Turn Type	Prot			Prot		Perm	Perm		pm+ov	Perm		pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases						6	8		8	4		4
Detector Phases	5	2		1	6	6	8	8	1	4	4	5
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	20.5	20.5	8.5	20.5	20.5	8.5
Total Split (s)	31.7	69.6	0.0	14.9	52.8	52.8	21.5	21.5	14.9	21.5	21.5	31.7
Total Split (%)	29.9%	65.7%	0.0%	14.1%	49.8%	49.8%	20.3%	20.3%	14.1%	20.3%	20.3%	29.9%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag		Lead	Lead	Lead			Lead			Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes			Yes			Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	None	Max	Max	None
Act Effct Green (s)	27.7	69.2		9.4	48.8	48.8	17.5	17.5	30.9	17.5	17.5	49.2
Actuated g/C Ratio	0.26	0.65		0.09	0.46	0.46	0.17	0.17	0.29	0.17	0.17	0.46
v/c Ratio	0.59	0.60		0.46	0.74	0.15	0.21	0.12	0.10	0.27	0.14	0.59
Control Delay	30.2	7.4		41.1	24.1	4.9	41.1	38.9	8.1	42.5	39.2	23.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.2	7.4		41.1	24.1	4.9	41.1	38.9	8.1	42.5	39.2	23.2
LOS	C	A		D	C	A	D	D	A	D	D	C
Approach Delay		11.1			23.4			27.8			26.6	
Approach LOS		B			C			C			C	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 100 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 18.6 Intersection LOS: B
Intersection Capacity Utilization 71.5% ICU Level of Service C
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative + Project-AM
6: San Marcos Blvd & Las Posas Rd

Splits and Phases: 6: San Marcos Blvd & Las Posas Rd



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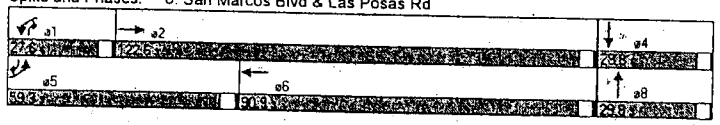
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.732			0.719		
Satd. Flow (perm)	1770	3522	0	1770	3539	1583	1364	1863	1583	1339	1863	1583
Satd. Flow (RTOR)		4				37			43			29
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	295	1469	50	65	1201	55	45	45	45	60	35	266
Adj. Flow (vph)	317	1580	54	70	1291	59	48	48	48	65	38	286
Lane Group Flow (vph)	317	1634	0	70	1291	59	48	48	48	65	38	286
Turn Type	Prot			Prot		Perm	Perm		pm+ov	Perm		pm+ov
Protected Phases	5	2		1	6			8	1		4	5
Permitted Phases						6	8		8	4		4
Detector Phases	5	2		1	6	6	8	8	1	4	4	5
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	20.5	20.5	8.5	20.5	20.5	8.5
Total Split (s)	59.3	122.6	0.0	27.6	90.9	90.9	29.8	29.8	27.6	29.8	29.8	59.3
Total Split (%)	32.9%	68.1%	0.0%	15.3%	50.5%	50.5%	16.6%	16.6%	15.3%	16.6%	16.6%	32.9%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes			Yes			Yes
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max	None	Max	Max	None
Act Effct Green (s)	44.3	129.5		12.7	97.9	97.9	25.8	25.8	42.5	25.8	25.8	74.1
Actuated g/C Ratio	0.25	0.72		0.07	0.54	0.54	0.14	0.14	0.24	0.14	0.14	0.41
v/c Ratio	0.73	0.64		0.56	0.67	0.07	0.24	0.18	0.12	0.34	0.14	0.43
Control Delay	61.4	13.0		93.1	18.4	3.6	72.2	69.8	15.6	75.0	69.1	34.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	13.0		93.1	18.4	3.6	72.2	69.8	15.6	75.0	69.1	34.7
LOS	E	B		F	B	A	E	E	B	E	E	C
Approach Delay		20.9			21.4			52.6			44.8	
Approach LOS		C			C			D			D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 157 (87%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 24.6 — Intersection LOS: C
Intersection Capacity Utilization 69.5% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: San Marcos Blvd & Las Posas Rd



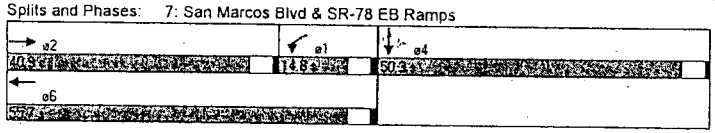
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱	↰↰	↑↑↑					↰	↓	↱
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.950	
Satd. Flow (prot)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			996									3
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	817	956	180	1931	0	0	0	0	255	0	440
Adj. Flow (vph)	0	851	996	188	2011	0	0	0	0	266	0	458
Lane Group Flow (vph)	0	851	996	188	2011	0	0	0	0	133	133	458
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phases		2	2	1	6					4	4	4
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	20.5
Total Split (s)	0.0	40.9	40.9	14.8	55.7	0.0	0.0	0.0	0.0	50.3	50.3	50.3
Total Split (%)	0.0%	38.6%	38.6%	14.0%	52.5%	0.0%	0.0%	0.0%	0.0%	47.5%	47.5%	47.5%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					Max	Max	Max
Act Effct Green (s)		36.9	36.9	10.8	51.7					46.3	46.3	46.3
Actuated g/C Ratio		0.35	0.35	0.10	0.49					0.44	0.44	0.44
v/c Ratio		0.48	0.62	0.54	0.81					0.18	0.18	0.66
Control Delay		24.4	9.2	41.6	18.9					19.1	19.1	29.1
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		24.4	9.2	41.6	18.9					19.1	19.1	29.1
LOS		C	A	D	B					B	B	C
Approach Delay		16.2			20.9						25.4	
Approach LOS		B			C						C	

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 45 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 19.8 Intersection LOS: B
Intersection Capacity Utilization 71.2% ICU Level of Service C
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative + Project-AM
7: San Marcos Blvd & SR-78 EB Ramps

Splits and Phases: 7: San Marcos Blvd & SR-78 EB Ramps



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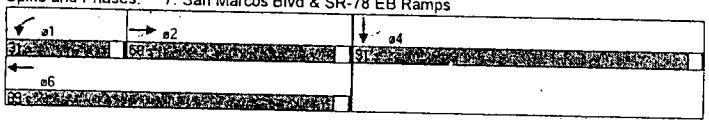
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↑	↰↰	↑↑↑					↰	↑	↱
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.950	
Satd. Flow (prot)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Flt Permitted				0.950						0.950	0.950	
Satd. Flow (perm)	0	5085	2787	3433	5085	0	0	0	0	1681	1681	1583
Satd. Flow (RTOR)			720									14
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	0	1264	1060	320	1466	0	0	0	0	370	0	535
Adj. Flow (vph)	0	1303	1093	330	1511	0	0	0	0	381	0	572
Lane Group Flow (vph)	0	1303	1093	330	1511	0	0	0	0	191	190	572
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Detector Phases		2	2	1	6					4	4	4
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	20.5
Total Split (s)	0.0	58.0	58.0	31.0	89.0	0.0	0.0	0.0	0.0	91.0	91.0	91.0
Total Split (%)	0.0%	32.2%	32.2%	17.2%	49.4%	0.0%	0.0%	0.0%	0.0%	50.6%	50.6%	50.6%
Yellow Time (s)		3.5	3.5	3.5	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None	C-Max					Max	Max	Max
Act Effct Green (s)		58.8	58.8	22.2	85.0					87.0	87.0	87.0
Actuated g/C Ratio		0.33	0.33	0.12	0.47					0.48	0.48	0.48
v/c Ratio		0.78	0.78	0.78	0.63					0.24	0.23	0.74
Control Delay		45.2	9.9	79.9	27.2					28.1	28.1	43.6
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Total Delay		45.2	9.9	79.9	27.2					28.1	28.1	43.6
LOS		D	A	E	C					C	C	D
Approach Delay		29.1			36.6						37.4	
Approach LOS		C			D						D	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 78 (43%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 33.3 Intersection LOS: C
Intersection Capacity Utilization 69.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 7: San Marcos Blvd & SR-78 EB Ramps



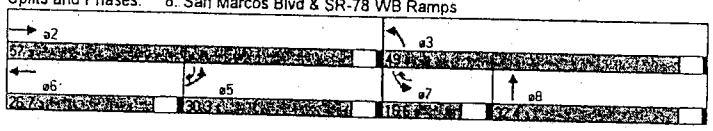
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.95	0.95	1.00	1.00	0.88
Frt			0.850			0.850		0.982				0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	0	5085	1583	3433	3476	0	1770	0	2787
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	0	5085	1583	3433	3476	0	1770	0	2787
Satd. Flow (RTOR)			216			102		14				23
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	415	512	190	0	783	105	1124	400	55	90	0	525
Adj. Flow (vph)	472	582	216	0	890	119	1277	455	62	102	0	597
Lane Group Flow (vph)	472	582	216	0	890	119	1277	517	0	102	0	597
Turn Type	Prot		Free			pm+ov	Prot			Prot		Over
Protected Phases	5	2			6	7	3	8		7		5
Permitted Phases			Free			6						
Detector Phases	5	2			6	7	3	8		7		5
Minimum Initial (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0		4.0
Minimum Split (s)	8.5	20.5			20.5	8.5	8.5	20.5		8.5		8.5
Total Split (s)	30.3	57.0	0.0	0.0	26.7	16.6	49.0	32.4	0.0	16.6	0.0	30.3
Total Split (%)	28.6%	53.8%	0.0%	0.0%	25.2%	15.7%	46.2%	30.6%	0.0%	15.7%	0.0%	28.6%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5		3.5		3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0		1.0		1.0
Lead/Lag	Lag				Lead	Lead		Lag		Lead		Lag
Lead-Lag Optimize?	Yes				Yes	Yes		Yes		Yes		Yes
Recall Mode	None	C-Max			C-Max	None	None	Max		None		None
Act Effct Green (s)	26.3	53.0	106.0		22.7	33.6	45.0	30.1		10.9		26.3
Actuated g/C Ratio	0.25	0.50	1.00		0.21	0.32	0.42	0.28		0.10		0.25
v/c Ratio	0.55	0.33	0.14		0.82	0.21	0.88	0.52		0.56		0.84
Control Delay	22.6	7.4	0.2		46.8	4.3	36.2	33.6		57.0		48.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0		0.0
Total Delay	22.6	7.4	0.2		46.8	4.3	36.2	33.6		57.0		48.7
LOS	C	A	A		D	A	D	C		E		D
Approach Delay		11.8			41.8			35.5				
Approach LOS		B			D			D				

Intersection Summary

Cycle Length: 106
Actuated Cycle Length: 106
Offset: 52 (49%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 32.6 — Intersection LOS: C
Intersection Capacity Utilization 75.6% — ICU Level of Service D
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative + Project-AM
8: San Marcos Blvd & SR-78 WB Ramps

Splits and Phases: 8: San Marcos Blvd & SR-78 WB Ramps



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040912-Lago De San Marcos

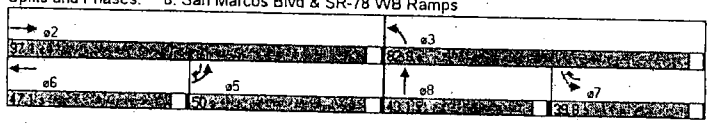
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	0.95	0.95	1.00	1.00	0.88
Frt			0.850			0.850		0.973				0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	0	5085	1583	3433	3444	0	1770	0	2787
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	0	5085	1583	3433	3444	0	1770	0	2787
Satd. Flow (RTOR)			91			78		13				86
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	435	1054	230	0	742	75	868	295	65	170	0	515
Adj. Flow (vph)	453	1098	240	0	773	78	904	307	68	177	0	536
Lane Group Flow (vph)	453	1098	240	0	773	78	904	375	0	177	0	536
Turn Type	Prot		Free			pm+ov	Prot			Prot		Over
Protected Phases	5	2			6	7	3	8		7		5
Permitted Phases			Free			6						
Detector Phases	5	2			6	7	3	8		7		5
Minimum Initial (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0		4.0
Minimum Split (s)	8.5	20.5			20.5	8.5	8.5	20.5		8.5		8.5
Total Split (s)	50.0	97.1	0.0	0.0	47.1	39.8	82.9	43.1	0.0	39.8	0.0	50.0
Total Split (%)	27.8%	53.9%	0.0%	0.0%	26.2%	22.1%	46.1%	23.9%	0.0%	22.1%	0.0%	27.8%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5		3.5		3.5
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0		1.0		1.0
Lead/Lag	Lag				Lead	Lag		Lead		Lag		Lag
Lead-Lag Optimize?	Yes				Yes	Yes		Yes		Yes		Yes
Recall Mode	None	C-Max			C-Max	None	None	Max		None		None
Act Effct Green (s)	46.0	105.8	180.0		55.8	82.9	66.2	39.1		23.1		46.0
Actuated g/C Ratio	0.26	0.59	1.00		0.31	0.46	0.37	0.22		0.13		0.26
v/c Ratio	0.52	0.53	0.15		0.49	0.10	0.72	0.49		0.78		0.69
Control Delay	28.9	5.3	0.2		52.6	5.2	52.0	62.1		97.8		55.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.5	0.0		0.0		0.0
Total Delay	28.9	5.3	0.2		52.6	5.2	52.5	62.1		97.8		55.7
LOS	C	A	A		D	A	D	E		F		E
Approach Delay		10.6			48.3			55.3				
Approach LOS		B			D			E				

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 86 (48%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 38.4 Intersection LOS: D
Intersection Capacity Utilization 67.1% ICU Level of Service C
Analysis Period (min) 15

1/25/2006
Lanes, Volumes, Timings
Near Term Cumulative + Project - PM
8: San Marcos Blvd & SR-78 WB Ramps

Splits and Phases: 8: San Marcos Blvd & SR-78 WB Ramps



Y:\040912-Lago De San Marcos (STD)\Analysis\Synchro\01-25-06\NTC + Proj PM.sy7
J. Bavos/V Haskell
Darnell & Associates, Inc.
040912-Lago De San Marcos

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	247	4	0	268	5	15	0	1	5	0	40
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	16	271	4	0	295	5	16	0	1	5	0	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		417										
pX, platoon unblocked												
vC, conflicting volume	300			276			498	607	138	467	606	150
vC1, stage 1 conf vol	0			0								
vC2, stage 2 conf vol	0			0								
vCu, unblocked vol	300			276			498	607	138	467	606	150
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)	3.1			3.1								
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			96	100	100	99	100	95
cM capacity (veh/h)	979			988			427	403	885	472	403	870

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	152	140	0	196	104	18	49
Volume Left	16	0	0	0	0	16	5
Volume Right	0	4	0	0	5	1	44
cSH	979	1700	1700	1700	1700	441	795
Volume to Capacity	0.02	0.08	0.00	0.12	0.06	0.04	0.06
Queue Length 95th (ft)	1	0	0	0	0	3	5
Control Delay (s)	1.1	0.0	0.0	0.0	0.0	13.5	9.8
Lane LOS	A					B	A
Approach Delay (s)	0.6		0.0			13.5	9.8
Approach LOS						B	A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	288	15	2	182	5	7	0	0	5	0	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	32	310	16	2	196	5	8	0	0	5	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		417										
pX, platoon unblocked												
vC, conflicting volume	201			326			495	588	163	422	593	101
vC1, stage 1 conf vol	0			0								
vC2, stage 2 conf vol	0			0								
vCu, unblocked vol	201			326			495	588	163	422	593	101
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)	3.1			3.1								
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			98	100	100	99	100	99
cM capacity (veh/h)	1017			970			440	406	853	502	403	935

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	187	171	2	130	71	8	16
Volume Left	32	0	2	0	0	8	5
Volume Right	0	16	0	0	5	0	11
cSH	1017	1700	970	1700	1700	440	727
Volume to Capacity	0.03	0.10	0.00	0.08	0.04	0.02	0.02
Queue Length 95th (ft)	2	0	0	0	0	1	2
Control Delay (s)	1.7	0.0	8.7	0.0	0.0	13.3	10.1
Lane LOS	A		A			B	B
Approach Delay (s)	0.9		0.1			13.3	10.1
Approach LOS						B	B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	184	59	44	50	85	199
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	198	63	47	54	91	214
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	347	198	305			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	347	198	305			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	68	92	96			
cM capacity (veh/h)	626	843	1255			

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	198	63	101	305
Volume Left	198	0	47	0
Volume Right	0	63	0	214
cSH	626	843	1255	1700
Volume to Capacity	0.32	0.08	0.04	0.18
Queue Length 95th (ft)	34	6	3	0
Control Delay (s)	13.4	9.6	3.9	0.0
Lane LOS	B	A	A	
Approach Delay (s)	12.5		3.9	0.0
Approach LOS	B			

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	202	56	61	65	60	127
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	227	63	69	73	67	143
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	349	139	210			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	349	139	210			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	63	93	95			
cM capacity (veh/h)	616	909	1361			

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total	227	63	142	210
Volume Left	227	0	69	0
Volume Right	0	63	0	143
cSH	616	909	1361	1700
Volume to Capacity	0.37	0.07	0.05	0.12
Queue Length 95th (ft)	42	6	4	0
Control Delay (s)	14.2	9.3	4.0	0.0
Lane LOS	B	A	A	
Approach Delay (s)	13.1		4.0	0.0
Approach LOS	B			

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	184	59	44	50	85	199
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	198	63	47	54	91	214

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	198	63	101	305
Volume Left (vph)	198	0	47	0
Volume Right (vph)	0	63	0	214
Hadj (s)	0.53	-0.67	0.13	-0.39
Departure Headway (s)	6.0	4.8	5.1	4.4
Degree Utilization, x	0.33	0.08	0.14	0.37
Capacity (veh/h)	570	707	659	781
Control Delay (s)	10.7	7.0	9.0	10.0
Approach Delay (s)	9.8		9.0	10.0
Approach LOS	A		A	A

Intersection Summary			
Delay	9.8		
HCM Level of Service	A		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis 10: Lake San Marcos Dr & San Marino Dr

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	202	56	61	65	60	127
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	227	63	69	73	67	143

Direction, Lane #	EB 1	EB 2	NB 1	SB 1
Volume Total (vph)	227	63	142	210
Volume Left (vph)	227	0	69	0
Volume Right (vph)	0	63	0	143
Hadj (s)	0.53	-0.67	0.13	-0.37
Departure Headway (s)	5.9	4.7	5.1	4.5
Degree Utilization, x	0.37	0.08	0.20	0.26
Capacity (veh/h)	583	727	666	748
Control Delay (s)	11.1	6.9	9.4	9.1
Approach Delay (s)	10.2		9.4	9.1
Approach LOS	B		A	A

Intersection Summary			
Delay	9.7		
HCM Level of Service	A		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX G

- All-Way Stop-Control Warrants for Lake San Marcos /San Marino
- TAC Report of February 23, 2001

Existing Conditions All-Way Stop-Control Warrants for Lake San Marcos /San Marino

TRAFFIC WARRANT FOR ALL-WAY STOP CONTROLLED INTERSECTION – ADOPTED FROM MUTCD 2003 EDITION

Intersection: Lake San Marcos Drive / San Marino Drive Condition/Year: Existing

I) SUPPORT

Support Criteria			
1. Is the volume of traffic on the intersecting roads approximately equal?	Four Hour Volume on Major Street (both approaches)	Four Hour Volume on Minor Street (both approaches)	(YES) / NO
	1008	932	
2. Is there is a safety concern associated with pedestrians, bicyclists, and all other users?	YES / NO	Comments:	
3. Can all-way stop control be useful as a safety measure at the intersection?	YES / NO	Comments:	

II) GUIDANCE

A. Traffic Signal Warrant

Summary of Traffic Signal Warrant (Interim Condition)										
Eight Hour Vehicular Volume										
Street	Approach	Approach Lanes		Hourly Volume						
		1	>=2	8-9A	10-11	11-12	11-2	2-3	3-4	4-5	5-6
San Marino	Major Street (Total of both approaches)	✓		338	192	219	190	189	185	256	229
Lake San Marcos	Minor Street (Highest Approach)		✓	232	171	189	188	178	217	248	235

Four Hour Vehicular Volume							
Street	Approach	Approach Lanes		Hourly Volume			
		1	>=2	8-9 am	3-4 pm	4-5 pm	5-6 pm
San Marino	Major Street (Total of both approaches)	✓		338	185	256	229
Lake San Marcos	Minor Street (Highest Approach)		✓	232	217	248	235

Peak Hour Vehicular Volume					
Street	Approach	Approach Lanes		Hourly Volume	
		1	>=2	7:45 - 8:45 am	4-5 pm
San Marino	Major Street (Total of both approaches)	✓		346	268
Lake San Marcos	Minor Street (Highest Approach)		✓	207	232

Eight Hour Vehicular Volume Warrant Satisfied[1]	YES (NO)
Four Hour Vehicular Volume Warrant Satisfied[1]	YES (NO)
Peak Hour Vehicular Volume Warrant Satisfied[1]	YES (NO)

[1] See attached traffic signal warrant

B. Crash History

Crash History				
Intersection	No. of Crashes	No. of Years	No. of crashes[1] correctable by All-Way Stop	No. of crashes[1] correctable by All-Way Stop >= 5 in 12 month period
San Marino / Lake San Marcos	1	3	0	YES (NO)

[1] Such crashes include right-and left turn collisions and right-angle collisions

TRAFFIC WARRANT FOR ALL-WAY STOP CONTROLLED INTERSECTION – ADOPTED FROM MUTCD 2003 EDITION

Intersection: Lake San Marcos Dr / San Marino Dr Condition/Year: Existing

C. Minimum Volumes

1. Eight Hour Vehicular Volume on Major Street												
Street	Approach	Hourly Volume								Aver-age	>= 300 vph
		8-9	10-11	11-12	1-2	2-3	3-4	4-5	5-6		
San Marino	Major Street (Total of both approaches)	338	192	219	196	189	185	256	229	225	YES/ (NO)

vph = vehicles per hour

2. Eight Hour Vehicular, Pedestrian and Bicycle Volume on Minor Street												
Street	Approach	Travel Mode	Hourly Volume								Ave.	>= 200 uph	Ave. Delay to Veh. Tr.[1]
			8-9	10-11	11-12	1-2	2-3	3-4	4-5	5-6			
Lake San Marcos Blvd	Minor Street (Total of both approaches)	Veh.	232	171	187	188	178	217	248	235	207	(YES/) NO	AM - 11.7 PM - 12.0
		Ped.											
		Cyc.											
		Total											

uph = units per hour; Veh. Tr. = Vehicular Traffic; [1] Average delay to minor-street vehicular traffic should be at least 30 seconds per vehicle during the highest hour.

3. 85th Percentile Approach Speed of Major Street					
Street	Approach	85th Percentile Approach Speed of Major Street	> 40 mph or 65 km/h	If YES is any of the minimum vehicular warrant satisfied	
				70 % of 300 vph	70 % of 200 uph
~~Lake~~ San Marino	Major Street (Total of both approaches)	25	YES/ (NO)	YES/ NO	YES/ NO

vph = vehicles per hour; uph = units per hour; mph = miles per hour; km/h = kilometers per hour

D. No. of Criteria Satisfied to 80 percent

No. of Criteria Satisfied to 80 percent			
Intersection	B	C1	C2
San Marino / Lake San Marcos	YES/(NO)	YES/(NO)	YES/(NO)

Criterion C.3 is excluded from this condition.

III) OPTION

Option Criteria			
	Criterion	Criterion Satisfied	Comments
A.	Need to control left-turn conflicts	YES / NO	
B.	Need to control vehicle/ pedestrian conflicts near locations that generate high pedestrian volumes	YES / NO	
C.	Locations where a road user, after stopping, cannot see conflicting traffic and is not able to reasonably safely negotiate the intersection unless conflicting cross traffic is also required to stop; and	YES / NO	
D.	An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where all-way stop control would improve traffic operational characteristics of the intersection.	YES / NO	

Criterion C.3 is excluded from this condition.

All-Way Stop Control 100 % Warrant Satisfied:	YES	(NO)
All-Way Stop Control 70 % Warrant Satisfied:	YES	(NO)

Traffic Count Summary for: Monday, September 20, 2004

Time	Minor Street: Lake San Marcos Drive	Major Street: San Marino Drive		
	Eastbound Traffic	Est. Northbound Traffic	Southbound Traffic	Total
Midnight - 1:00 AM	4	3	9	12
1:00 AM - 2:00 AM	4	1	3	4
2:00 AM - 3:00 AM	7	1	2	3
3:00 AM - 4:00 AM	4	1	3	4
4:00 AM - 5:00 AM	4	4	11	15
5:00 AM - 6:00 AM	10	14	45	59
6:00 AM - 7:00 AM	48	54	170	**224**
7:00 AM - 8:00 AM	130	74	231	**304**
8:00 AM - 9:00 AM	**232**	82	255	**338**
9:00 AM - 10:00 AM	170	56	174	174
10:00 AM - 11:00 AM	**171**	61	192	192
11:00 AM - 12:00 PM	**187**	70	219	**219**
12:00 PM - 1:00 PM	168	131	175	175
1:00 PM - 2:00 PM	**188**	143	190	190
2:00 PM - 3:00 PM	**178**	142	189	189
3:00 PM - 4:00 PM	**217**	139	185	185
4:00 PM - 5:00 PM	**248**	111	148	**256**
5:00 PM - 6:00 PM	**235**	98	131	**229**
6:00 PM - 7:00 PM	152	85	113	**198**
7:00 PM - 8:00 PM	104	86	114	**200**
8:00 PM - 9:00 PM	55	44	58	102
9:00 PM - 10:00 PM	49	30	40	70
10:00 PM - 11:00 PM	29	16	21	37
11:00 PM - Midnight	19	5	7	12

Existing Conditions – Lake San Marcos / San Marino Dr

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume								
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[1]	80%[2]	70%[3]	100%[1]	80%[2]	70%[3]	
1	1	500	400	350	150	120	105	
2 or more	1	600	480	420	150	120	105	
2 or more	2 or more	600	480	420	200	160	140	
1	2 or more	(500)	400	350	(200)	160	140	

Condition B—Interruption of Continuous Traffic								
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[1]	80%[2]	70%[3]	100%[1]	80%[2]	70%[3]	
1	1	750	600	525	75	60	53	
2 or more	1	900	720	630	75	60	53	
2 or more	2 or more	900	720	630	100	80	70	
1	2 or more	(750)	600	525	(100)	80	70	

[1] Basic minimum hourly volume.
[2] Used for combination of Conditions A and B after adequate trial of other remedial measures.
[3] May be used when the major-street speed exceeds 70 km/h (40 mph) or in an isolated community with a population of less than 10,000.

Street	Approach	Approach Lanes		Hourly Volume							
		One	Two or More	8-9 AM	10-11 AM	11-12 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM
San Marino Dr	Major Street (Total of both Approaches)	✓		338	192	219	190	189	185	256	229
Lake San Marcos	Minor Street (Highest Approach)		✓	232	171	187	188	178	217	248	235

Conditon A - Satisfied?

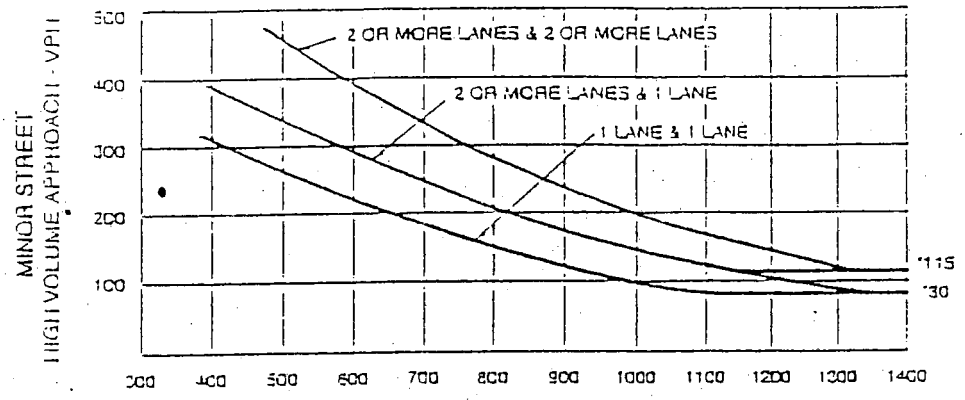
	100%	80%	70%
Major Street	No	No	No
Minor Street	No	Yes	Yes

Conditon B - Satisfied?

	100%	80%	70%
Major Street	No	No	No
Minor Street	Yes	Yes	Yes

Lake San Marcos / San Marino Dr

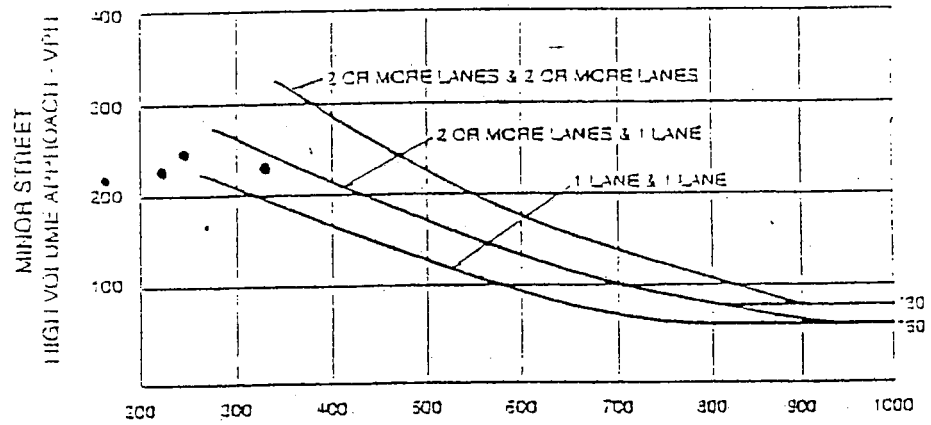
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 von applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 von applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 80 von applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 von applies as the lower threshold volume for a minor-street approach with one lane.

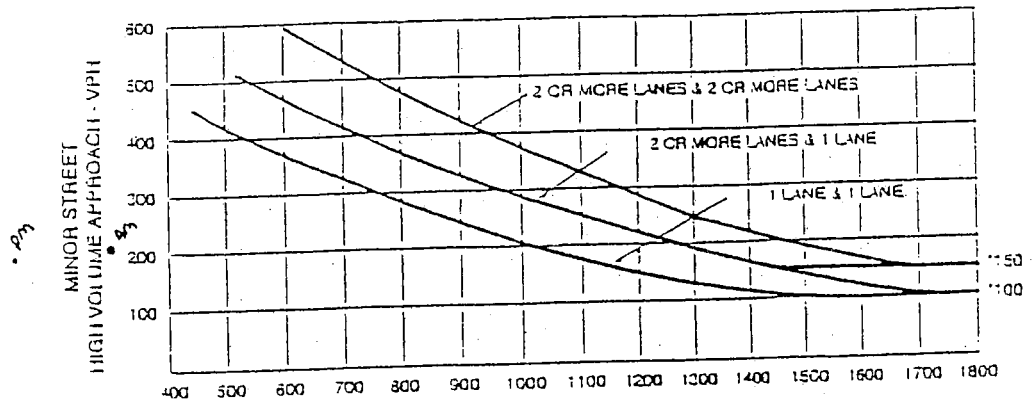
Satisfied? Yes ☐ No ☒

Street	Approach	Approach Lanes		Hourly Volume			
		One	2 or More	8-9 am	3-4 pm	4-5 pm	5-6 pm
San Marino Dr	Major Street - (Total of both Approaches)	✓		338	185	256	224
Lake San Marcos	Minor Street - (Highest Approach)		✓	232	217	248	235

EXISTING Conditions

Lake San Marcos/
San Marino Dr

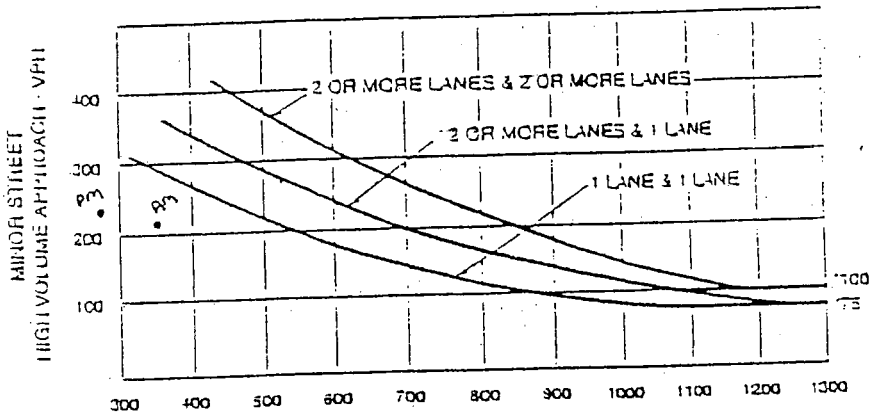
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Satisfied? Yes ☐ No ☒

Street	Approach	Approach Lanes		Hourly Volume			
		One	2 or More	7:35-8:35 AM		4-5 PM	
San Marino Dr	Major Street - (Total of both Approaches)	✓		346		268	
Lake San Marcos	Minor Street - (Highest Approach)		✓	207		232	

Near Term Cumulative Conditions All-Way Stop-Control Warrants
for Lake San Marcos /San Marino

TRAFFIC WARRANT FOR ALL-WAY STOP CONTROLLED INTERSECTION – ADOPTED FROM MUTCD 2003 EDITION

Intersection: Lake San Marcos Dr / San Marino Condition/Year: Near Term Cumulative + Project

I) SUPPORT

Support Criteria			
1. Is the volume of traffic on the intersecting roads approximately equal?	Four Hour Volume on Major Street (both approaches): 1173	Four Hour Volume on Minor Street (both approaches): 993	(YES) / NO
2. Is there is a safety concern associated with pedestrians, bicyclists, and all other users?	YES / NO	Comments:	
3. Can all-way stop control be useful as a safety measure at the intersection?	YES / NO	Comments:	

II) GUIDANCE

A. Traffic Signal Warrant

Summary of Traffic Signal Warrant (Interim Condition)

Eight Hour Vehicular Volume

Street	Approach	Approach Lanes: 1	Approach Lanes: >=2	8-9	10-11	11-12	1-2	2-3	3-4	4-5	5-6
San Marino	Major Street (Total of both approaches)	✓		344	258	294	340	338	331	264	234
Lake San Marcos	Minor Street (Highest Approach)		✓	247	182	199	200	190	231	264	251

Four Hour Vehicular Volume

Street	Approach	Approach Lanes: 1	Approach Lanes: >=2	8-9	3-4	4-5	5-6
San Marino	Major Street (Total of both approaches)	✓		344	331	264	234
Lake San Marcos	Minor Street (Highest Approach)		✓	247	231	264	251

Peak Hour Vehicular Volume

Street	Approach	Approach Lanes: 1	Approach Lanes: >=2	7:45-8:45 AM	4-5 PM
San Marino	Major Street (Total of both approaches)	✓		360	230
Lake San Marcos	Minor Street (Highest Approach)		✓	225	247

Eight Hour Vehicular Volume Warrant Satisfied[1]	YES (NO)
Four Hour Vehicular Volume Warrant Satisfied[1]	YES (NO)
Peak Hour Vehicular Volume Warrant Satisfied[1]	YES (NO)

[1] See attached traffic signal warrant

B. Crash History

Crash History				
Intersection	No. of Crashes	No. of Years	No. of crashes[1] correctable by All-Way Stop	No. of crashes[1] correctable by All-Way Stop >= 5 in 12 month period
				YES (NO)

[1] Such crashes include right-and left turn collisions and right-angle collisions

TRAFFIC WARRANT FOR ALL-WAY STOP CONTROLLED INTERSECTION – ADOPTED FROM MUTCD 2003 EDITION

Intersection: Lake San Marcos / San Marino Dr Condition/Year: Near Term Cumulative

C. Minimum Volumes

1. Eight Hour Vehicular Volume on Major Street											
Street	Approach	Hourly Volume								Aver-age	>= 300 vph
		8-9	10-11	11-12	1-2	2-3	3-4	4-5	5-6		
San Marino	Major Street (Total of both approaches)	344	258	294	340	338	331	264	234	300	(YES) NO
vph = vehicles per hour											

2. Eight Hour Vehicular, Pedestrian and Bicycle Volume on Minor Street												
Street	Approach	Travel Mode	Hourly Volume								>= 200 uph	Ave. Delay to Veh. Tr.[1]
			8-9	10-11	11-12	1-2	2-3	3-4	4-5	5-6	Ave.	
Lake San Marcos	Minor Street (Total of both approaches)	Veh.	247	182	199	200	190	231	264	251	221	(YES) NO
		Ped.										AM - 12.0
		Cyc.										PM - 12.3
		Total										
uph = units per hour; Veh. Tr. = Vehicular Traffic; [1] Average delay to minor-street vehicular traffic should be at least 30 seconds per vehicle during the highest hour.												

3. 85th Percentile Approach Speed of Major Street					
Street	Approach	85th Percentile Approach Speed of Major Street	> 40 mph or 65 km/h	If YES is any of the minimum vehicular warrant satisfied	
				70 % of 300 vph	70 % of 200 uph
San Marino	Major Street (Total of both approaches)	25 ±	YES/(NO)	YES/NO	YES/NO
vph = vehicles per hour; uph = units per hour; mph = miles per hour; km/h = kilometers per hour					

D. No. of Criteria Satisfied to 80 percent

No. of Criteria Satisfied to 80 percent			
Intersection	B	C1	C2
Lake San Marcos/San Marino	YES/(NO)	(YES)/NO	YES/(NO)
Criterion C.3 is excluded from this condition.			

III) OPTION

Option Criteria			
	Criterion	Criterion Satisfied	Comments
A.	Need to control left-turn conflicts	YES / NO	
B.	Need to control vehicle/ pedestrian conflicts near locations that generate high pedestrian volumes	YES / NO	
C.	Locations where a road user, after stopping, cannot see conflicting traffic and is not able to reasonably safely negotiate the intersection unless conflicting cross traffic is also required to stop; and	YES / NO	
D.	An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where all-way stop control would improve traffic operational characteristics of the intersection.	YES / NO	
Criterion C.3 is excluded from this condition.			

All-Way Stop Control 100 % Warrant Satisfied:	YES	(NO)
All-Way Stop Control 70 % Warrant Satisfied:	YES	NO

Traffic Count Summary for Near Term Cumulative Conditions

Time	Minor Street: Lake San Marcos Drive	Major Street: San Marino Drive		
	Eastbound Traffic	Est. Northbound Traffic	Southbound Traffic	Total
Midnight - 1:00 AM	4	3	9	12
1:00 AM - 2:00 AM	4	1	3	4
2:00 AM - 3:00 AM	7	1	2	3
3:00 AM - 4:00 AM	4	1	3	4
4:00 AM - 5:00 AM	4	4	11	15
5:00 AM - 6:00 AM	11	14	46	60
6:00 AM - 7:00 AM	51	55	173	228
7:00 AM - 8:00 AM	139	75	236	**311**
8:00 AM - 9:00 AM	**247**	84	260	**344**
9:00 AM - 10:00 AM	181	57	177	234
10:00 AM - 11:00 AM	**182**	62	196	258
11:00 AM - 12:00 PM	**199**	71	223	**294**
12:00 PM - 1:00 PM	179	134	179	**313**
1:00 PM - 2:00 PM	**200**	146	194	**340**
2:00 PM - 3:00 PM	**190**	145	193	**338**
3:00 PM - 4:00 PM	**231**	142	189	**331**
4:00 PM - 5:00 PM	**264**	113	151	**264**
5:00 PM - 6:00 PM	**251**	100	134	234
6:00 PM - 7:00 PM	162	87	115	202
7:00 PM - 8:00 PM	111	88	116	204
8:00 PM - 9:00 PM	59	45	59	104
9:00 PM - 10:00 PM	52	31	41	72
10:00 PM - 11:00 PM	31	16	21	37
11:00 PM - Midnight	20	5	7	12

Lake San Marcos / San Marino Dr Near Term Cumulative

December 2000

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Venicular Volume							
Number of lanes for moving traffic on each approach		Venicles per hour on major street (total of both approaches)			Venicles per hour on higher-volume minor-street approach (one direction only)		
Major Street	Minor Street	100%[a]	80%[a]	70%[c]	100%[a]	80%[a]	70%[c]
1.....	1.....	500	400	350	150	120	105
2 or more...	1.....	600	480	420	150	120	105
2 or more...	2 or more...	600	480	420	200	160	140
1.....	2 or more....	(500)	400	350	(200)	160	140

Condition B—Interruption of Continuous Traffic							
Number of lanes for moving traffic on each approach		Venicles per hour on major street (total of both approaches)			Venicles per hour on higher-volume minor-street approach (one direction only)		
Major Street	Minor Street	100%[a]	80%[a]	70%[c]	100%[a]	80%[a]	70%[c]
1.....	1.....	750	600	525	75	60	53
2 or more...	1.....	900	720	630	75	60	53
2 or more...	2 or more...	900	720	630	100	80	70
1.....	2 or more....	(750)	600	525	(100)	80	70

[a] Basic minimum hourly volume.
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures.
[c] May be used when the major-street speed exceeds 70 km/h (40 mph) or in an isolated community with a population of less than 10,000.

Street	Approach	Approach Lanes		Hourly Volume							
		One	Two or More	8-9	10-11	11-12	1-2	2-3	3-4	4-5	5-6
San Marino	Major Street (Total of both Approaches)	✓		344	258	294	340	338	331	264	234
Lake San Marcos	Minor Street (Highest Approach)		✓	247	182	199	200	190	231	264	251

Conditon A - Satisfied?

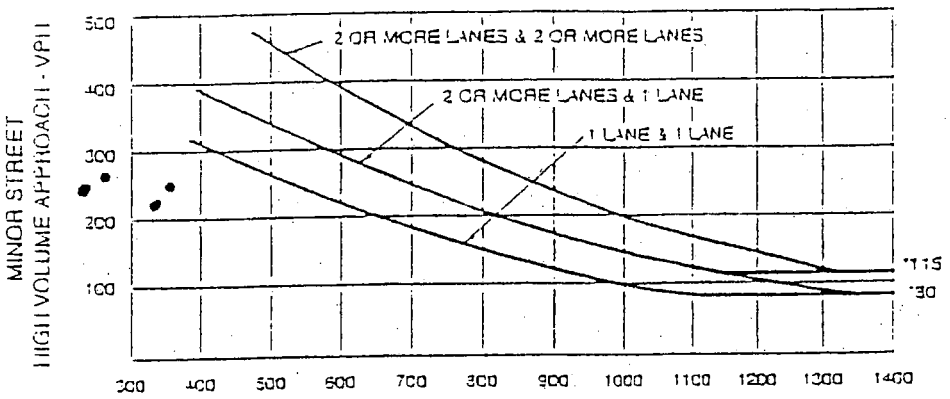
	100%	80%	70%
Major Street	No	No	No
Minor Street	No	Yes	Yes

Conditon B - Satisfied?

	100%	80%	70%
Major Street	No	No	No
Minor Street	Yes	Yes	Yes

Near Term Cumulative

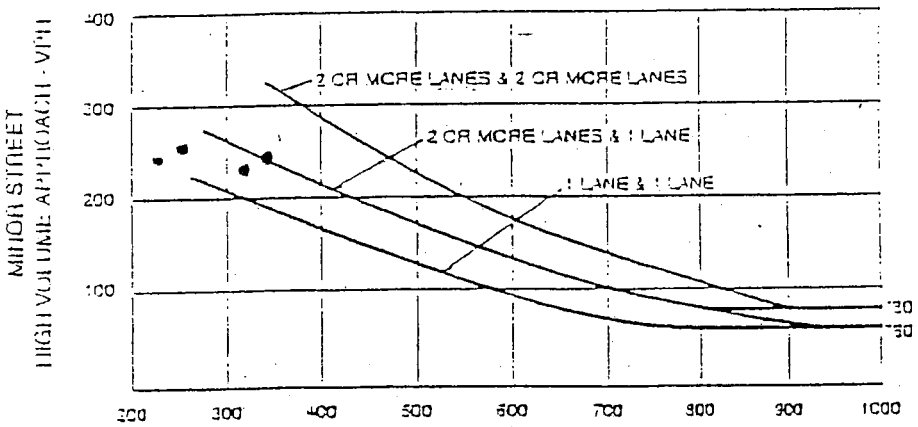
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

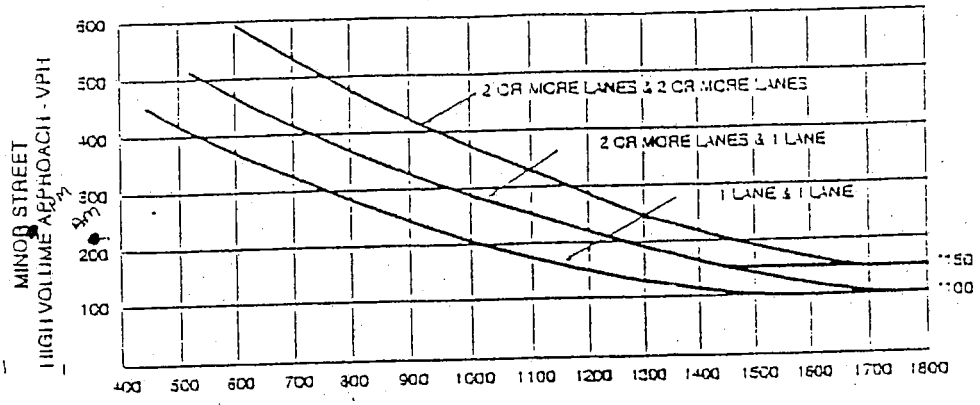
Satisfied? Yes ☐ No ☒

Street	Approach	Approach Lanes		Hourly Volume			
		One	2 or More	8-9	3-4	4-5	5-6
	Major Street - (Total of both Approaches)	✓		344	331	264	234
	Minor Street - (Highest Approach)		✓	247	231	264	251

Lake San Marcos / San Marino Dr

Near Term Cumulative

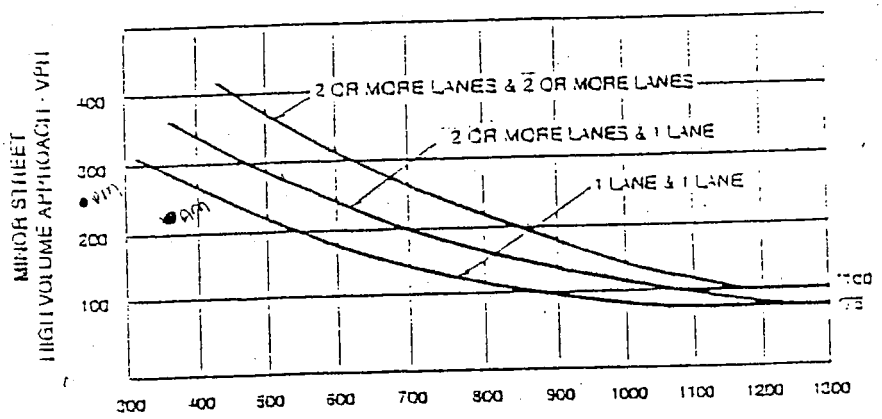
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Satisfied? Yes ☐ No ☒

Street	Approach	Approach Lanes		Hourly Volume			
		One	2 or More	AM		PM	
	Major Street - (Total of both Approaches)	✓		360		230	
	Minor Street - (Highest Approach)		✓	225		247	

TAC Report of February 23, 2001

SAN DIEGO COUNTY TRAFFIC ADVISORY COMMITTEE

COMMITTEE REPORT OF:	February 23, 2001	Item 5-D
SUPERVISORIAL DISTRICT:	5	
SUBJECT:	All-Way Stop Control	
LOCATION:	Lake San Marcos Drive and San Marino Drive, LAKE SAN MARCOS (Thos. Bros. 1128-C3)	
INITIATED BY:	Tom Achter, President, Lake San Marcos Community Association, 1145 San Marino Drive, Lake San Marcos, CA 92069	
REQUEST:	Establish an All-Way Stop Control	

PROBLEM AS STATED BY REQUESTER:

The Lake San Marcos Community Association (LSMCA) has represented the 4500 citizens of this community for several decades. We stand now, with assurances of complete support of the entire community, as the singular voice of the community in this matter.

For the past several years, the Lake San Marcos neighborhood has seen an ever-increasing traffic problem manifest on our streets. In a recent survey, conducted by LSMCA, the Lake residents resoundly identified ***Increasing Traffic and Traffic Safety*** as the single most perplexing issue faced by the community.

In August 2000, the LSMCA chartered a committee of concerned residents to research, evaluate and propose remedies for this problem. The committee worked extensively with members of the San Diego county offices of the Sheriff, Public Works, Traffic Calming, as well as the California Highway Patrol and the City of San Marcos. In December 2000, the committee forwarded to the LSMCA the enclosed plan for "Lake San Marcos Traffic Remediation". Central to this plan is the traffic counting activity by the committee, conducted on October 23, 2000 under the auspices of the County, which revealed significant traffic overload on certain Lake San Marcos street and identified the predominant cause of this traffic overload.

Due to the proximity of the intersection of Rancho Santa Fe Road and San Marcos Boulevard, certain Lake San Marcos streets are being used as a "cut through" alternative to the enormous commuter traffic that has built up on the arterial streets of the North County. The principle route through the Lake, utilizing Lake San Marcos Blvd., San Marino Dr. and San Pablo Dr. to access Discovery Street in the City of San Marcos, has caused a 500% traffic overload condition on San Pablo Dr.

PROBLEM AS STATED BY REQUESTER (cont.)

It should be noted that this section of the Lake residential area is a county road, has no sidewalks, is an authorized golf cart route and is routinely used by our elderly and partially infirmed citizens, both walking and in mechanized wheel chairs. Traffic in this section, which was designed for a nominal daily load of 1000 vehicles, has be registered with nearly ***6000 average daily trips at an average of 10 MPH above the posted speed limit.***

The citizens of Lake San Marcos simply cannot and will not tolerate continuation of this condition. There has been a recent in crease in accidents and there ***will*** be a future fatality at some point in the near future, unless something is done very ***quickly!***

The solutions proposed by the Plan requiring TAC action include:

- Additional stop signs. Proposed location is Lake San Marcos Drive and San Marino Drive.

DATA:

Existing Traffic Devices

Lake San Marcos Drive is a striped four-lane roadway 80 feet in width that "Tees" into San Marino Drive from the north. There is a planted center median separating both directions of traffic. It is stop controlled with limit lines and STOP pavement legends in place for both southbound travel lanes. There is also a Stop Ahead sign and pavement legends in place for southbound motorists. The road is posted 25 MPH.

San Marino Drive is a striped two-lane residential-in-nature roadway 40 feet in width. The west leg of San Marino Drive is posted 25 MPH; the east leg is unposted.

Average Daily Traffic Volumes	2/01
San Marino Drive:	
W/o Lake San Marcos Drive	1640 EB
E/o Lake San Marcos Drive	2520 WB
Lake San Marcos Drive:	
N/o San Marino Drive	2990 SB

Collision Data

There has been one reported injury collision at this intersection in the last three years (12-31-97 to 12-31-00). It involved a southbound bicyclist who failed to stop at the stop sign and violated the right-of-way of an eastbound motorist.

Recommendation

The Committee recommends the issue of establishing an all-way stop control at the intersection of Lake San Marcos Drive and San Marino Drive be continued until the question of installing a time-actuated gate across another road within the Lake San Marcos community to discourage commuter traffic is resolved.

Discussion

The requester, who was in attendance, stated one of the primary reasons for requesting an all-way stop control be established at this location was to discourage commuter traffic from using local roads within the Lake San Marcos community as a short-cut. Although the suggested statewide guidelines used to evaluate the need for an all-way stop control were very close to being met, the Committee expressed concern such an installation might not accomplish the requester's desired goal. Rather, an all-way stop control might actually encourage commuter traffic to use Lake San Marcos Drive since it would be easier to enter San Marino Drive if it were stopped.

The Committee agreed commuter traffic should be discouraged from using local streets within the Lake San Marcos community as a short-cut. However, the Committee did not believe the establishment of all-way stop controls at various locations, as suggested by the requester, was an effective method of addressing this issue.

During the discussion of this issue, the requester stated the homeowner's association was currently exploring with the Department of Public Works the possibility of installing a time-actuated gate across a road within the Lake San Marcos community to discourage commuter traffic. It was the Committee's belief this alternative, if implemented, would be a more effective method of accomplishing the homeowner Association's desired goal. Therefore, the Committee recommends the issue of establishing an all-way stop control at the intersection of Lake San Marcos Drive and San Marino Drive be continued until a decision is made on the installation of a time-actuated gate.

Necessary Board Action

File this report.

APPENDIX H

- Response to County Comments

Darnell & ASSOCIATES, INC.
TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

MEMORANDUM

DATE: July 21, 2005

TO: Troy Burns, Lundstrom + Associates

FROM: Jessica Bavos

D&A Ref. No: 040912

RE: Lago De San Marcos (TM 5388) – Responses to the County of San Diego's June 16, 2005 Comment Letter.

Darnell & Associates, Inc. (D&A) has reviewed the County of San Diego's June 16, 2005 comment letter on our traffic impact analysis for the proposed Lago De San Marcos (TM 5388). The following summarizes our responses to each of the County's comments. These responses have been incorporated into our latest version of the traffic impact analysis.

COUNTY OF SAN DIEGO COMMENTS DATED JUNE 16, 2005

Traffic

- In comments made regarding the TIF program it should be noted that the County said the fee was $6,383 per dwelling unit, this is the fee for single family units. This is incorrect since the project is a 40 multi-family condominium unit, therefore the fee is actually $4,255 per unit.
- In the TIF language provided by the County, when talking about the project's ADT the language said the proposed project generated 320 ADT that assumes 8 trips/dwelling units, when D&A has assumed 6 trips/dwelling units to yield a project generation of 240 ADT.

Comment 1: Per the County Standards the proposed project will have cumulative traffic impacts to Rancho Santa Fe Road and San Marcos Boulevard that are located within the City of San Marcos. County guidelines should be utilized for assessing impacts in the City of San Marcos as well as the County.

Response 1: The project correctly identifies cumulative impacts within the City of San Marcos. The applicant has agreed to pay the TIF for the traffic traveling on the County roadways that are a cumulative impact.

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E-mail: BD492@aol.com

Comment 2: If the County Transportation Impact Fee (TIF) program is not utilized, the 18% of trips assigned to Rancho Santa Fe Road must be tracked further down to identify trips on County roads.

Response 2: The TIF language was added to the text in the Mitigation Section of the report.

Comment 3: On page 33, the developer proposes to modify the median on Lake San Marcos Drive to provide an eastbound and westbound left turn lane. The consultant / applicant should provide a proposed striping plan for the median modification to the Department of Public Works Traffic Engineering Section for review and comment.

Response 3: Figure 13 was added to the report to show the modified median design.

Darnell & ASSOCIATES, INC.
TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

MEMORANDUM

DATE: January 26, 2006

TO: Troy Burns, Lundstrom + Associates

FROM: Vicki S. Haskell, P.E. VSH

D&A Ref. No: 040912
RE: Lago De San Marcos (TM 5388) – Responses to the County of San Diego's November 10, 2005 Comment Letter

Darnell & Associates, Inc. (D&A) has reviewed the County of San Diego's November 10, 2005 comment letter on our August 16, 2005 traffic study for Lago De San Marcos (TM 5388). The following summarizes our responses to each of the County's comments.

Comment 1: The revised Traffic Study has adequately addressed our section's previous comments dated May 17, 2005.

Response 1: So Noted.

Comment 2: The Traffic Study (Pg. 34) has recommended that the project contribute to the County's TIF program in order to mitigate the project's cumulative impact.

Response 2: This recommendation is still made in our January 26, 2006 traffic study.

Comment 3: A full-size copy of Figure 13, proposed median modification at the Lake San Marcos Drive/La Tierra Drive intersection (Pg. 33) should be submitted and reviewed by DPW's Traffic Section.

Response 3: A full size copy of Figure 13 – Proposed Median Modification at the Lake San Marcos Drive/La Tierra Drive intersection will be submitted to the County for DPW's review.

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Darnell & ASSOCIATES, INC.
TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

MEMORANDUM

DATE: December 7, 2006

TO: Troy Burns, Lundstrom + Associates

FROM: Jessica Bavos

D&A Ref. No: 040912

RE: Lago De San Marcos (TM 5388) – Responses to the County of San Diego's May 16, 2006 Comment Letter

Darnell & Associates, Inc. (D&A) has reviewed the County of San Diego's May 16, 2006 comment letter on our January 26, 2006 traffic study for Lago De San Marcos (TM 5388). The following summarizes our responses to each of the County's comments.

Comment 1: The project applicant/engineer should provide an analysis for traffic volumes that would use the proposed left turn pocket for westbound traffic along San Marcos Drive. The length of the turn pocket needs to be adequate for deceleration and potential queuing.

Response 1: The traffic study has been revised to expand the discussion on the volume of traffic expected to utilize the westbound left turn lane at Lake San Marcos Drive and La Tierra Drive. The proposed 80-foot turn lane will adequately accommodate the projected demand. (See page 33 of our revised report.)

Comment 2: Operationally, it may be preferable to allow right turns out of Driveway "B" so that the driveway can be a standard driveway, and motorists desiring to continue east on Lake San Marcos Drive beyond La Tierra Drive can exit that driveway. The project applicant/engineer should consider a median opening posted for no U-turns for eastbound traffic, or a left turn pocket for eastbound traffic would be installed in order to better accommodate the right turns out of Driveway "B".

Response 2: Driveway "B" has been closed see Figure 2 (Page 4) for new Site Plan, thus this comment is no longer applicable.

Comment 3: The project engineer should state why prohibiting right turns out of Driveway "B" is recommended.

Response 3: Refer to Response 2.

Comment 4: If the project proposes to prohibit exit from Driveway "B", the project engineer should identify what measures will be implemented to prevent motorists from making right turns out of Driveway "B".

Response 4: Refer to Response 2.

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Comment 5: The design of the driveway should provide sufficient room to allow motorists to turn around once they realize that they can not exit from Driveway "B".

Response 5: Refer to Response 2.

Comment 6: The Traffic Study should verify that the 80-foot westbound left turn pocket length (Fig.13) at the Lake San Marcos Drive/La Tierra Drive/Driveway "D" intersection will be sufficient to accommodate the projected vehicle queues.

Response 6: There are 2 peak hour trips expected to use the westbound left turn pocket at the Lake San Marcos Drive/La Tierra Drive/Driveway "D" intersection. The average vehicle requires 25 feet of storage thus the queue at the westbound left turn lane is not expected to exceed 50 feet (i.e. 2 vehicles X 25 feet/vehicle = 50 feet). Therefore, the 80 foot turn pocket will be sufficient to accommodate the project vehicle queues.

Comment 7: Figure 13 was reviewed by the Department of Public Works for concept only. A signing and striping plan will need to be provided once project conditions have been approved. The project applicant/engineer should continue to coordinate with DPW staff in order to finalize the project's conditions of approval and improvement plans. If addressing the above questions/comments results in another change to the project's proposed access plan, the Traffic Study will need to be revised.

Response 7: So Noted.